

DISTRIBUTION AGE

A CHILTON  PUBLICATION

MAY, 1956



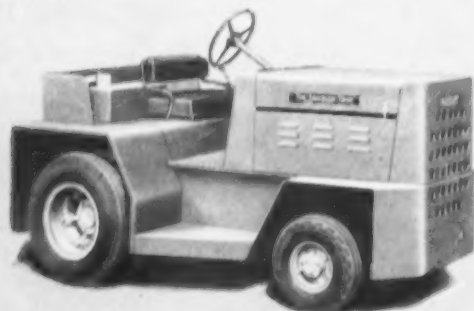
Annual Equipment Review

- Handling Equipment Primer
- Materials Handling Pre-Show Round-Up
- Industrial Truck Specifications

Two completely *NEW* gas tractors ...by MERCURY



The MERCURY "Huskie" and "Super-Huskie" were designed for rugged service—built to move mountains of material for long, continuous hours. Working either inside or outside, on level ground or on steep grades, in any type of weather, these new models will move your tonnage, regardless of size, shape or weight, for less. Utilize the power of these new models for your material handling operations.



MERCURY *"Super-Huskie"* MODEL 950 - Gas Tractor

Specifically designed for extra-heavy duty, the MERCURY "Super-Huskie" is a 6-wheel model developing a D.B.P. of 5,000 lbs. It incorporates the same features designed into the new "Huskie."

LOOK FOR US BOOTH 1003

Materials Handling Institute's Convention
Cleveland, Ohio • June 5 through June 8

MERCURY

FORK TRUCKS TRACTORS-TRAILERS

MERCURY *Huskie*

MODELS 930 and 940 GAS TRACTORS

4 Wheels—D.B.P. of 3,000 and 4,000 lbs., respectively

AVAILABLE IN LPG OR REGULAR GASOLINE MODELS

- ★ Six cylinder industrial engine—heavy duty clutch—fluid coupling and synchromesh transmission with provision for power take-off.
- ★ Full spring suspension—standard with all MERCURY tractors.
- ★ Smooth, functional body . . . frame, bumpers and fenders welded to form integral unit.
- ★ Unusual accessibility to all component parts.
- ★ Tops in operator comfort.

OPTIONAL EQUIPMENT:

1. L.P. Gas fuel system.
2. Torque converter and planetary transmission providing two speeds forward and one reverse, eliminating clutch pedal.

MAIL COUPON TODAY

MERCURY MANUFACTURING COMPANY
4104 South Halsted Street, Chicago 9, Illinois

Send me the following Mercury Bulletins:

- ☐ T 103—Model 930, "Huskie" Gas Tractor
☐ T 104—Model 940, "Huskie" Gas Tractor
☐ T 105—Model 950, "Super-Huskie" Gas Tractor

NAME _____

ADDRESS _____

CITY _____

ZONE _____ STATE _____

ATTN _____



*"I'm burning these ten-spots," said Hodge,
Burning bills in his big truck garage,
"To show how we lose,
When a new truck we choose,
Without first having checked on Dodge!"*

QUICK QUIZ FOR TRUCK BUYERS

Try this quick quiz before you buy your next truck—and you'll get a better truck for your money:

- Q.** What truck line offers you *today's lowest prices* on such popular models as the $\frac{1}{2}$ -ton panel, the 1-ton express, and the $1\frac{1}{2}$ - and 2-ton stakes?
- Q.** Which truck line has the largest cabs?
- Q.** Which has the greatest driver visibility?
- Q.** Which has the shortest turning radius?

The answer is "Dodge"—leader for the last 39 years. And this year "Dodge" is the answer to virtually every question you can ask that has to do with lower cost haulage or delivery.

You'll find Dodge trucks are the best answer, too, on price. For Dodge trucks are priced so competitively that no one can beat your Dodge dealer's deal.

When time comes to buy your next truck—get the answers that will lead you straight to today's best truck value—Dodge.



DODGE
Job Rated
TRUCKS

WITH THE FORWARD LOOK



Get the Dodge Dealer's Deal Before You Decide

We'll mow your lawn...

(FIGURATIVELY SPEAKING)



Such a gayer vacation when a helpful neighbor tends the lawn—no high grass to come home to!

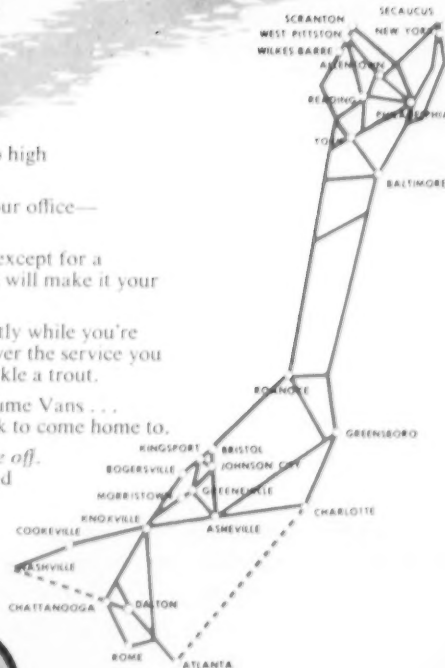
And your vacation's at its brightest when we "mow the lawn" at your office—no accumulated shipping worries when you breeze back in!

Maybe your firm staggers its vacations . . . or shuts down entirely, except for a skeleton crew. Either way, a talk with your Mason and Dixon man will make it your most restful vacation ever.

He'll help you schedule ahead . . . will keep shipments moving swiftly while you're away. Our complete facilities are working around the clock to deliver the service you want *when you want it* . . . even while you bask on the beach or tackle a trout.

LTL's or truckloads . . . standard trailers, refrigerated units or Volume Vans . . . we'll keep the goods rolling and give you a clear, no-headaches desk to come home to.

This year, as always at vacation time, we'll *take over while you take off*. Turn the details over to your Mason and Dixon representative—and this year enjoy your best vacation ever.



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MAY, 1956

DISTRIBUTION AGE

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May, 1956

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NEW FORK TRUCK DEVELOPMENT



Yale "integrated design"

Result of a 3-Year Research and Development Program

Yale combined 3 years of intensive research, development and field-testing to meet the urgent need of every industry for a complete line of gas, diesel, LP-gas and electric fork lift trucks which would assure increased safety, speed and efficiency. The result is Yale "Integrated Design"—the incorporation of the latest engineering and design advances as *standard features* in a complete new line of fork trucks that not only give management positive control over handling costs through high efficiency operation, but also reduce operator fatigue and promote operator safety.

LATEST YALE FIRST!

New Yale KG51 series gas trucks are the only industrial lift trucks which are GS approved by Underwriters' Laboratories. These Yale trucks satisfy all the requirements of the National Fire Protective Association for safe use where combustible fibers or containers of hazardous liquids or gases are being handled in storage. All new Yale gas trucks have Factory Mutual and Underwriters' Laboratories G approval.

"integrated design"

... now makes available a complete new line of fork lift trucks incorporating—for the first time in the industry—premium engineering advances as standard features.

Yale "Integrated Design" offers a complete choice of fork trucks, engineered to eliminate all handling-cost waste by meeting each industry's specific requirements for power, capacity, efficiency, safety, versatility and operator comfort. All the critical features necessary for maximum performance and minimum handling costs are built in as standard features throughout the entire Yale fork truck capacity range of 2,000 to 10,000 pounds!

New fully-automatic Yale Torque Transmission provides an infinite ratio of speeds and an automatic response for every power demand in starting or climbing grades under all load conditions. Coordinated inching control permits smooth, accurate maneuvering when high engine speeds are required for fast lifting. Forward or reverse travel motion is obtained by the mere flick of a switch located on the steering column. Standard Transmission and Fluid Coupling are also available in all capacities.

Self-adjusting hydraulic wheel brakes. An original Yale development (now, like many other Yale firsts, adopted by the industry), these brakes, of increased capacity in

the new Yale truck line, are mounted directly to each drive wheel for easier, faster stopping without jolting or load damage.

New Yale power lift is faster, smoother. Along with increased travel speeds, all new Yale truck models feature an improved roller channel construction that prevents hose damage and increases visibility. Side-thrust rollers reduce stress and compensate for off-center loading. Incorporated are other Yale-pioneered features: the anti-cavitation or unloading valve that eliminates channel sway; the flow-regulator valve that assures smooth lowering control without excessive speed.

New Yale "convenience styling." New Yale trucks are lower-built, more streamlined. Lowered cowl, "open vision" uprights and recessed, adjustable seats add to the visibility and protection of the operator. Yale "convenience styling" increases operator efficiency with controls for hoisting, lowering, tilting of channels and operation of attachments positioned for easy, right-hand operation—leaving the left hand free for steering. Instruments are waterproofed and recessed for protection in the lowered cowl, where they are centrally grouped for easy

reading. Yale's fuel tank holds sufficient fuel for a full shift's operation, is easily removable and heavily protected within steel sections. The "swing out" battery permits quick servicing and engine accessibility. The Yale-developed one-piece steel drive axle housing with pressed-in steel alloy sleeve assures longer life.

1956 Yale electric trucks incorporate many of the above construction features with such Yale electric truck features as multiple-speed design (four forward, four reverse) based on Yale's exclusive, patented, Magnetic Cam-O-Tactor controller providing smooth acceleration without "jumping" a speed range, and the dead-man control built into the seat to set mechanical wheel brakes when the operator leaves the truck.

First public showing of new Yale line. See new Yale trucks in action at the Materials Handling Institute Exposition in Cleveland, June 5 to 8. Assess for yourself the industry's most significant advances in industrial lift truck design. For more information now on the new Yale line, write: The Yale & Towne Manufacturing Company, Philadelphia 15, Pa., Dept. 25.

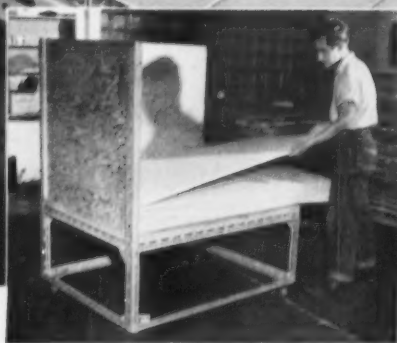
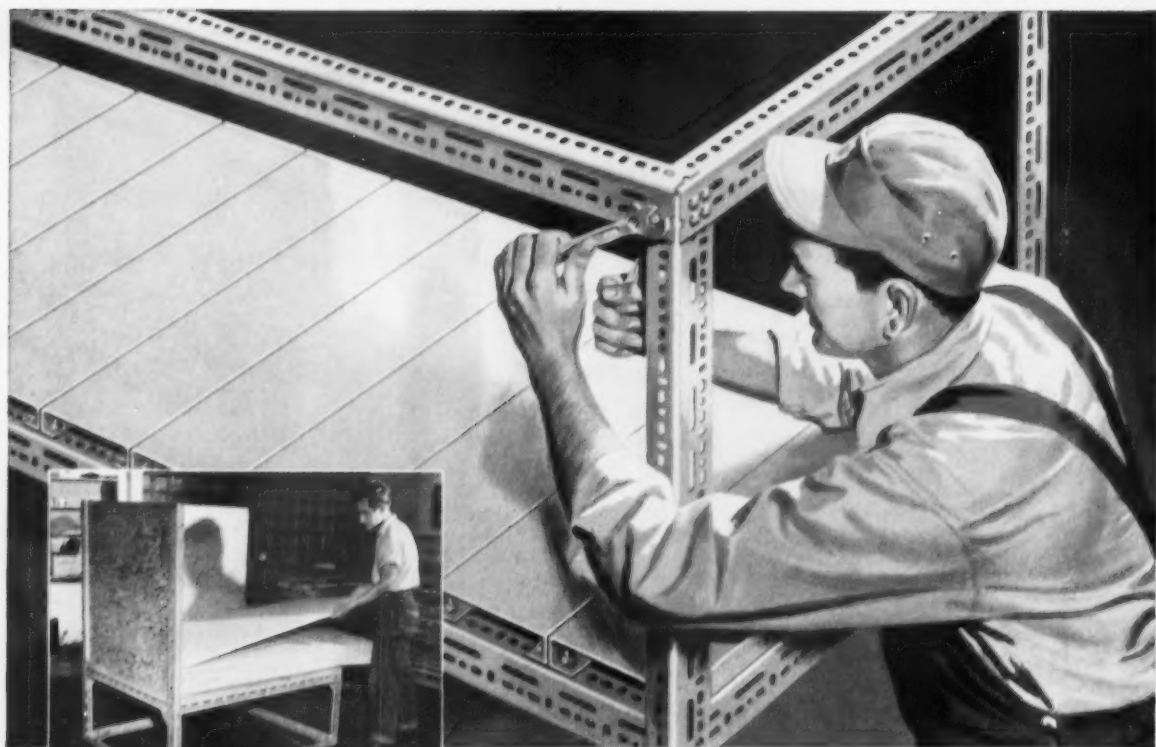
YALE*

*REG. U. S. PAT. OFF.

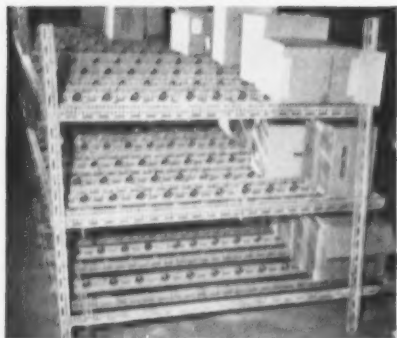
INDUSTRIAL LIFT TRUCKS AND HOISTS

Gas, Electric, Diesel & LP-Gas Industrial Lift Trucks • Worksavers • Warehouse • Hand Trucks • Hand and Electric Hoists

Circle No. 3 on Card, Page 53, for more information



STACKING CART



PICK RACK



STORAGE BINS

Just cut and bolt! . . .

Build anything you want with DEXION Slotted Angle

Almost anyone can assemble DEXION. All you need is a DEXION cutter and wrench to transform this precision-made, cold rolled, galvanized steel angle into practical, useful, economical equipment used almost anywhere in your plant, warehouse, store or office.

Measuring is easy. And one down stroke of the DEXION cutter leaves a clean, square cut. There are no tricky parts to cope with, either. Spacing of slots and holes is engineered to make it easy for you to produce an infinite variety of structures.

DEXION Slotted Angle is a packaged product, ten pieces to the package, in 10 or 12 foot lengths. Includes nuts and bolts. There are two sizes: 3" x 1½" x .104" and 2¼" x 1½" x .080".

Use DEXION panels for shelving or tables. They will support heavy weights and will bolt easily to any frame. DEXION casters make any frame movable.

FREE DEXION Idea Book—The New DEXION idea book will show you scores of actual examples of DEXION in use. Simply write DEPT. 5-L, DEXION Division, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois for the free booklet and the name of your nearest DEXION office or distributor.

DEXION SLOTTED ANGLE



Circle No. 4 on Card, Page 53, for more information

DISTRIBUTION AGE

the wise selector routes it

SPECTOR



Route that next small shipment "Customized"...

FAST PICKUP

Strategically located terminals and extensive city fleets (many radio dispatched) provide "on call" pickup and delivery service.

FAST LOADING

Specialized handling equipment, ample out-bound trailer pool and night loading cut dock time to a minimum.

FAST SCHEDULES

"round-the-clock" dispatching, teletype timed relay, 2-man sleeper and straight-thru runs assure fastest in-transit schedules.



Whatever you make, whatever you sell—today's highly competitive market calls for alert, efficient and flexible distribution practices. The way in which you handle that small order . . . that "hot" shipment . . . may well spell the difference between a satisfied customer and an account lost.

We at Spector appreciate the importance of the small shipment in your distribution effort. That is why we have geared our entire operation and personnel—from switchboard operator to Central Dispatch Supervisor—to the efficient handling of that five pound package, 50 pound carton, that 500 pound keg.

Yes, from pickup through delivery, our single objective is to keep your small shipment moving . . . rapidly . . . safely . . . economically.

FREE PICKUP AND DELIVERY

A U.S. Custom Bonded Common Carrier



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General Offices: 3100 South Wolcott Avenue, Chicago 8

TERMINALS IN: Baltimore-Washington • Boston • Bridgeport • Chicago • Decatur
Indianapolis • Milwaukee • Newark • New Britain • New York • Peoria
Philadelphia • Providence • St. Louis • Springfield (Mass.) • Worcester



One reason Associated Truck Lines specified Clark is the dependable local service offered by Modern Handling Equipment, Inc., Chicago. It's typical of all Clark dealers.

CLARK *POWRWORKER*® at ASSOCIATED TRUCK LINES

"It takes more than features..."

Truck features are important. Fact is the Powrworker gives you more features than any other powered hand truck.

BUT PERFORMANCE DOESN'T *JUST* DEPEND ON FEATURES. How about a year from now, or two years, or five? That's when you depend on service—fast, local service.

And that's where your local Clark dealer comes in. Clark dealers have the largest supply of service parts in the industry—genuine Clark parts that are warranted and guaranteed for quality. He has factory trained

men who *know* your machines. He provides prompt mobile service for emergencies, preventative maintenance right in your own plant, a completely equipped shop for rebuilding, and a fleet of rental trucks to help you over peak work loads. Here, is a *complete* service package.

SEE THE BONUS FEATURES of the Powrworker. Send for your copy of the new 16 page Powrworker booklet showing full details, cut-away views, reasons why the Powrworker will outperform any competitive machine on the market.

CLARK®
EQUIPMENT

DON'T MISS THE MATERIAL HANDLING SHOW,
JUNE 5-8, CLEVELAND, OHIO!

POWRWORKER SECTION, Industrial Truck Division

CLARK EQUIPMENT COMPANY

BATTLE CREEK 11, MICHIGAN

Circle No. 5 on Card, Page 53, for more information



On the Line—



Knowledge Can Be Fun

Years ago, most learning of crafts and industry processes was by doing. Boys were apprenticed in railroading, local drayage, carpentry, and other trades—even though they were sons of the firms' owners. It was considered smart to "learn the business from the ground up."

Many of our best executives are a product of that age. But, as George Gobel says, "They don't hardly make that kind no more . . . hardly."

Most of the last generation of youngsters have been "protected" from such "menial" labors and arduous training. When a mechanically-inclined lad said he wanted to be a machinist like Pop, the parents pushed him into mechanical engineering—even though the kid used his fingers and toes to add a column of figures.

Some of the boys graduated, of course, the others obtained employment in Pop's shop or gravitated unhappily into other jobs.

A strange thing has happened to the graduates and to those who found jobs in other fields. They started puttering around their homes with tools; in such great numbers that a new craze was born—Do-It-Yourself.

Among our personal acquaintances there are doctors, lawyers, judges, accountants, editors, corporation presidents and vice presidents, and others who, given an opportunity, display their home shops and the products of their labors.

Some months ago, we dropped in on a busy TM who, in the course of describing some plant modernization, picked up a sheaf of papers and showed us before-and-after floor plans. After the discussion, he leaned over very confidentially

and told us that he made all the drawings himself. To put it mildly, we were surprised.

While this was the first example of its kind to come to our attention, we have heard many traffic, transportation and warehouse executives speak authoritatively about fork trucks, cranes, conveyors, hoists, highway trucks and trailers, tires, axle ratios, and maintenance.

At a recent industrial equipment show, we met the president of a sizeable corporation in the booth of an insulation manufacturer. He mentioned that there were differences of opinion among some members of his firm as to the merit of certain insulation materials for a new building. He didn't say so in exact words, but we deduced that, until now, he wasn't able to settle the argument because he didn't have the necessary facts. However, it was plain to see from the way he asked questions that soon he would have the right answers—not only for his business but, also, for a summer cottage he and his sons were building with their own hands.

It is to such talented executives that this issue is dedicated. They won't need to rely on say-so, for example, about fork trucks. Between the Primer, Page 63, and the Specifications, Page 71, they have more data on the subject than can be found anywhere. Then, just in case they want to see those trucks in action, it's only a matter of weeks before the Materials Handling Exposition opens in Cleveland—and there's quite a pre-view of it beginning on Page 42.

Years ago, we editorialized that Knowledge provides Promotion, Power, and Protection. Today, we'd like to add that it can be fun, too.

Al Greene
EDITOR

Yakkety Yak

The pessimist doesn't think that knowledge is fun. He says,

... "You have to have a mother-in-law to know that mother-in-law jokes are not funny."

... "You've got to get burnt to know that fire is hot."

... "Highway radar is a good thing until a cop nabs you."

... "You discover the ice is too thin only when you fall in."

... "Locks are a great invention until you lose the keys."

... "Suntan is glamorous until you fall asleep on the beach."

... "Latin is a dead language until you get a prescription filled."

... "Mathematics is an exact science when the Treasury Department discovers that you can sub-

tract better than you can add."

... "You're smarter than the other guy until you get on a TV Quiz."

... "Grey hair lends dignity until you are told that you are too old for the job."

... "Lawns are beautiful until you have your own."

... "Jokes are funny until you tell one to an audience."



Padded Cells for Household Goods

WHEN YOU MOVE LONG-DISTANCE THE MAYFLOWER WAY

► Every piece of household goods is padded so thoroughly and loaded so carefully that it actually does have a "padded cell" of its own on a Mayflower move. Not only that, each piece of furniture is placed in the load where it will ride most securely. Plenty of clean, soft furniture pads are available, with experienced and fully trained operators to apply them... just another reason why it will pay you to standardize on Mayflower Service for your personnel transfers.

AERO MAYFLOWER TRANSIT COMPANY, INC. • INDIANAPOLIS

Mayflower Service is available through selected warehouse agents throughout the United States and Canada. Your local Mayflower agent is listed under Moving in the classified section of your telephone directory.



America's Finest Long-Distance Moving Service

LETTERS

TO THE EDITOR

Release of Stored Goods

To The Editor:

An individual puts furniture, on which a retail merchant has a contract of sale, in a warehouse. When he has failed to make contract payments over a period of time, the merchant asks that the furniture be released to him and he pays whatever is owing in storage.

In these cases, the party who stored the furniture has never even made a token payment on storage and pickup charges.

Are we within our rights to release this property, even though the party who stored it and signed the contract as owner, has not signed a release?

H. A. O'Brien

O'Brien's Transfer and Storage
Reno, Nevada.

First, if furniture is not mortgaged, or if it is mortgaged and not recorded an owner may store it and the warehouseman has a valid first lien to secure his storage charges. If the furniture is mortgaged and the mortgage is recorded, then the warehouseman's lien is secondary.

Of course, if the merchant pays the accumulated warehouse storage charges on furniture which a buyer has stored, such merchant has a legal right to possession of the furniture if the buyer has defaulted in making agreed payments.

Generally speaking, it is my opinion that without a court order you should obtain consent of the owner of the furniture to deliver same to the buyer who has a valid lien on same due to the fact that the buyer breached his payment contract.

If the buyer's financial interest in the furniture is relatively small, he could have little or no recourse against you for allowing the holder of an unpaid mortgage or conditional contract of sale to take possession of the furniture. On the other hand, if the buyer has paid almost the full contract price of the furniture, he may have recourse against you for delivering, without a court order or your consent, such furniture to the unpaid seller.—Leo T. Parker, DA Legal Consultant.

Piggy-Back Guide

DA's new Piggy-Back Routing Guide, which cross-lists some 1,200 points to and from which TOFC is available, has been reprinted in booklet form. Copies are available at 25¢ each.

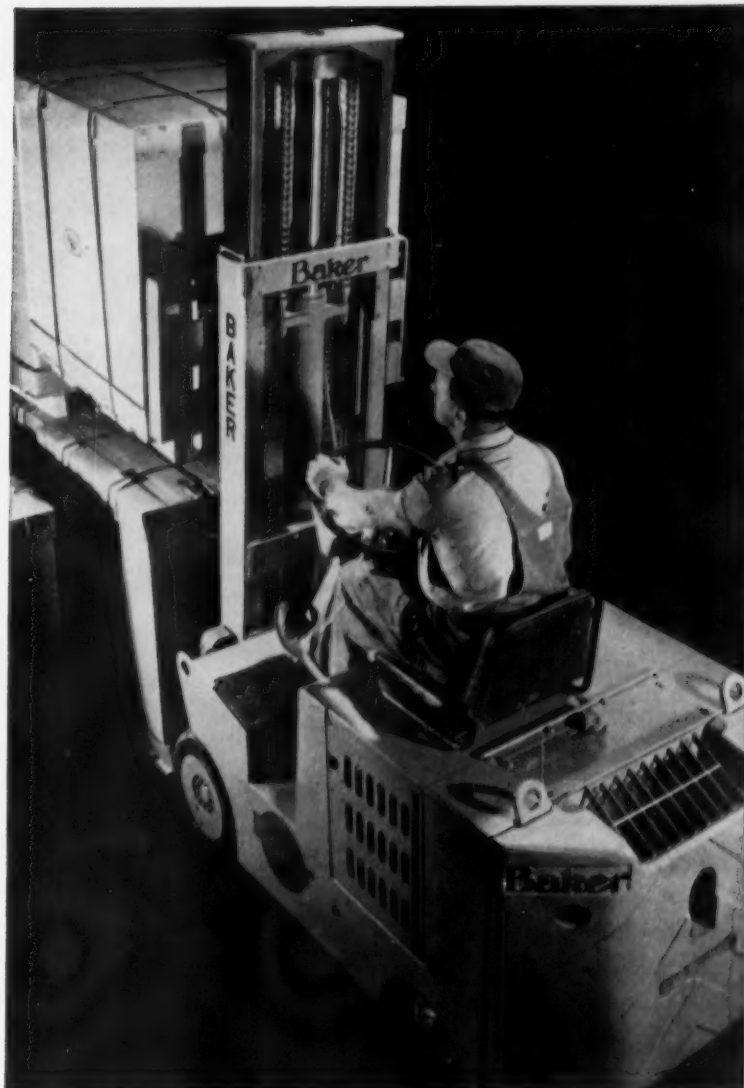
Write:

DISTRIBUTION AGE

Chestnut & 56th Sts. Phila. 39, Pa.

*the gas
fork truck
that makes
the fewest
and shortest
trips to the
maintenance
shop...*

BAKER "FG"



Industrial trucks "out-of-service" mean dollars down the drain... not only repair dollars, but even more dollars for lost work. That's why we loaded the Baker "FG" gas trucks with features that mean substantially more time on the job. Here are a few:

Heavy-duty industrial truck engine operates at optimum RPM for least strain and abuse. Pistons are balanced to grams instead of ounces, crankshaft to 4 inch-ounces, connecting rods to 2 grams. Compact, rigid "power train" requires no troublesome universal joints. Clutch housing is split for better accessibility. Single oil supply lubricates entire assembly. Large full-floating, self-equalizing, self-energizing brakes have single-point adjustment.

Baker "FG" gas fork trucks, available in 3000, 4000, 5000 and 6000 pound capacities, are the only gas trucks with a full 6-months' warranty... an added assurance. Write for specific bulletins.

See Baker Trucks in action at the MHI Show June 5-8

Baker®

handling equipment

THE BAKER-RAULANG COMPANY

1216 WEST 80th STREET • CLEVELAND 2, OHIO

A subsidiary of Otis Elevator Company

6G2



**Every
LTL Shipper
needs a friend!**

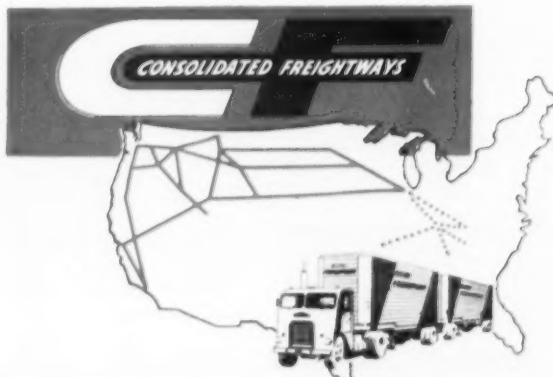
When your shipping room is bustling with orders for customers at a hundred destinations—you need a friend. Some *one* carrier who can easily, efficiently and economically assume the responsibility of your direct distribution. It's here that Consolidated Freightways can serve you best—because

CF serves more points direct than any other carrier in the West. So when you ship LTL* or full load, one shipment or one hundred, call CF—every shipper's friend. CF offers you direct routing and fast daily schedules PLUS one carrier convenience and one carrier responsibility.

*Less Than Truck Load

**SEATTLE, SPOKANE, PORTLAND, OAKLAND,
SAN FRANCISCO, LOS ANGELES, SALT LAKE
CITY, MINNEAPOLIS, ST. PAUL, CHICAGO**

Terminals in 49 other key cities from the Pacific Coast to the Great Lakes... thru service to all major eastern cities.



**Last year truck operators
bought 10,000 more
heavy-duty* **INTERNATIONALS**
than any other make!**



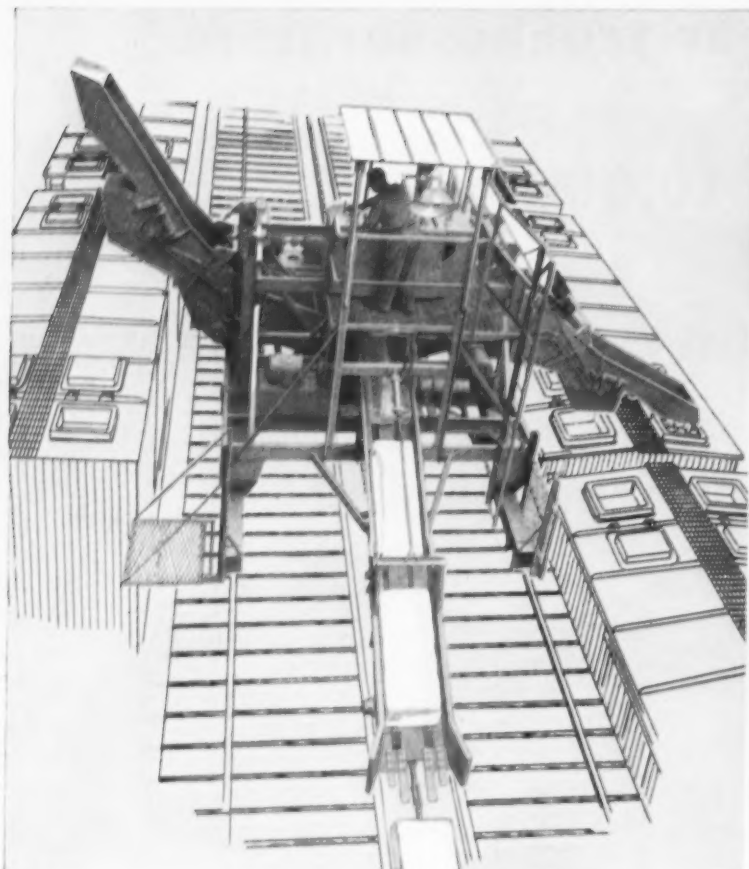
And it's been like that every single year since 1932. For the past 24 straight years, 25% or more of all heavy-duty trucks sold have been INTERNATIONAL. The reason is simple: Fleet owners' records *prove* INTERNATIONALS cost less to own and operate. Let your INTERNATIONAL Dealer or Branch start saving you money, right now! INTERNATIONAL HARVESTER COMPANY, Chicago.

*16,001 lbs. GVW and up, 1955 new truck registrations.

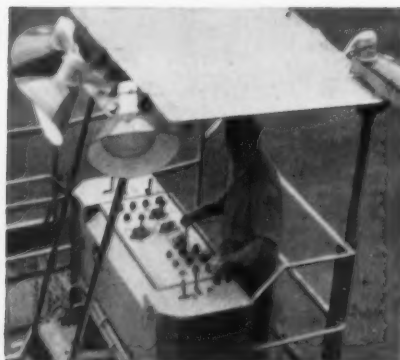


FIRST with men who know truck costs!

Circle No. 7 on Card. Page 53, for more information



One man controls all operations of Model 55 Car Icer. These include machine travel (up to 300 feet per minute in either direction), start and stop of dock conveyor, raising and lowering of pick-up conveyor and discharge chutes, ice sizing and operation of flop gate to feed ice into desired roof hatch. Machine also features hydraulic track brakes which assure smooth, positive positioning.



Elevated platform allows operator full visibility in all directions. Controls are within easy reach, functionally grouped to simplify operation. Lights permit top-speed icing around the clock.



Write for Folder 2643 on the New Link-Belt dock-type car icer, adaptable to typical existing docks from 12 to 18 feet in width and of any length—and to cars of all heights, hatch covers of all types.

Faster icing of refrigerator cars

New Link-Belt car icer mechanizes existing docks...
fills bunkers with coarse, crushed or chunk ice automatically

THE need for getting perishables to market in farm-fresh condition requires high-speed icing—not only at point of shipment but also at re-icing stations in transit. That's why the new Link-Belt Model 55 dock-type car icer holds economic significance, not only for railroads, but also for every grower, shipper and purchaser of produce.

This flexible machine receives 300- or 400-pound cakes of ice "on the flat" from the dock conveyor... crushes up to 40 cakes per minute and delivers to roof hatches of car bunkers. There's no manual handling. Costs come down—trains are on the way faster.

Other time and money saving features are reversible cross conveyor and dual discharge chutes which permit high-speed icing from either side of the dock.

If your business is concerned with transportation of perishable foods, call your nearest Link-Belt office. Or write LINK-BELT COMPANY, Dept. DA, Prudential Plaza, Chicago 1, Ill.

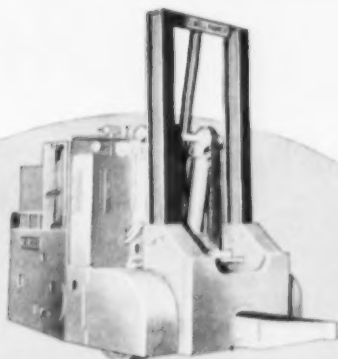
LINK-BELT
ICING EQUIPMENT

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.

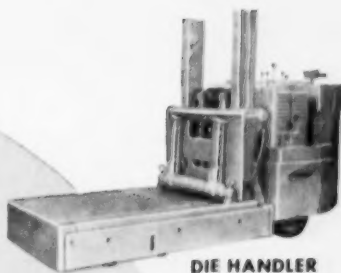
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LOW LIFT TRUCKS



RAM TRUCK



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COMBINATION
LOW LIFT AND CRANE



CRANES



FORK TRUCKS

SEE THEM IN ACTION— At The MHI'S Exposition

It's a double celebration for Elwell-Parker—an outstanding exhibit of modern trucks plus a display of the world's first industrial truck, built by Elwell-Parker in 1906. You'll see the outstanding progress made in fifty years of industrial truck building.

NEW FORK TRUCKS

Low headroom type—lower battery compartment keeps operator's head below uprights even with short mast.

Operator stand-up, center control—equipped with hydraulic lift and tilt. Models from 4,000 to 10,000 lbs. capacity.

NEW PLATFORM TRUCKS

Hydraulic high lift models—a new concept in high lift platform truck design.

Inclined Press Die Handler—a unique truck built to handle dies in and out of inclined presses.

Booth 1020



WATCH THE DEMONSTRATION

The brand new models described above, together with new clamps and other fork truck attachments, plus a host of other modern fork, platform and crane trucks, will be demonstrated under simulated working conditions. You'll be sure to see plenty of cost-cutting ideas.

THE **ELWELL-PARKER** ELECTRIC COMPANY
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If you're not attending the show, send for the special "Golden Anniversary" Truck Folder.

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UNITED offers 300-mph DC-6A Cargoliner service coast to coast!

UNITED alone has radar-equipped DC-6A Cargoliners for smoother flight, more dependability!

UNITED alone links major markets in the East, Midwest, all the Pacific Coast!

Ship sure

UNITED'S DC-6As have greater tie-down strength than any other cargo plane!

UNITED'S DC-6A Motorized Tug Bar moves heaviest pieces with extra care!

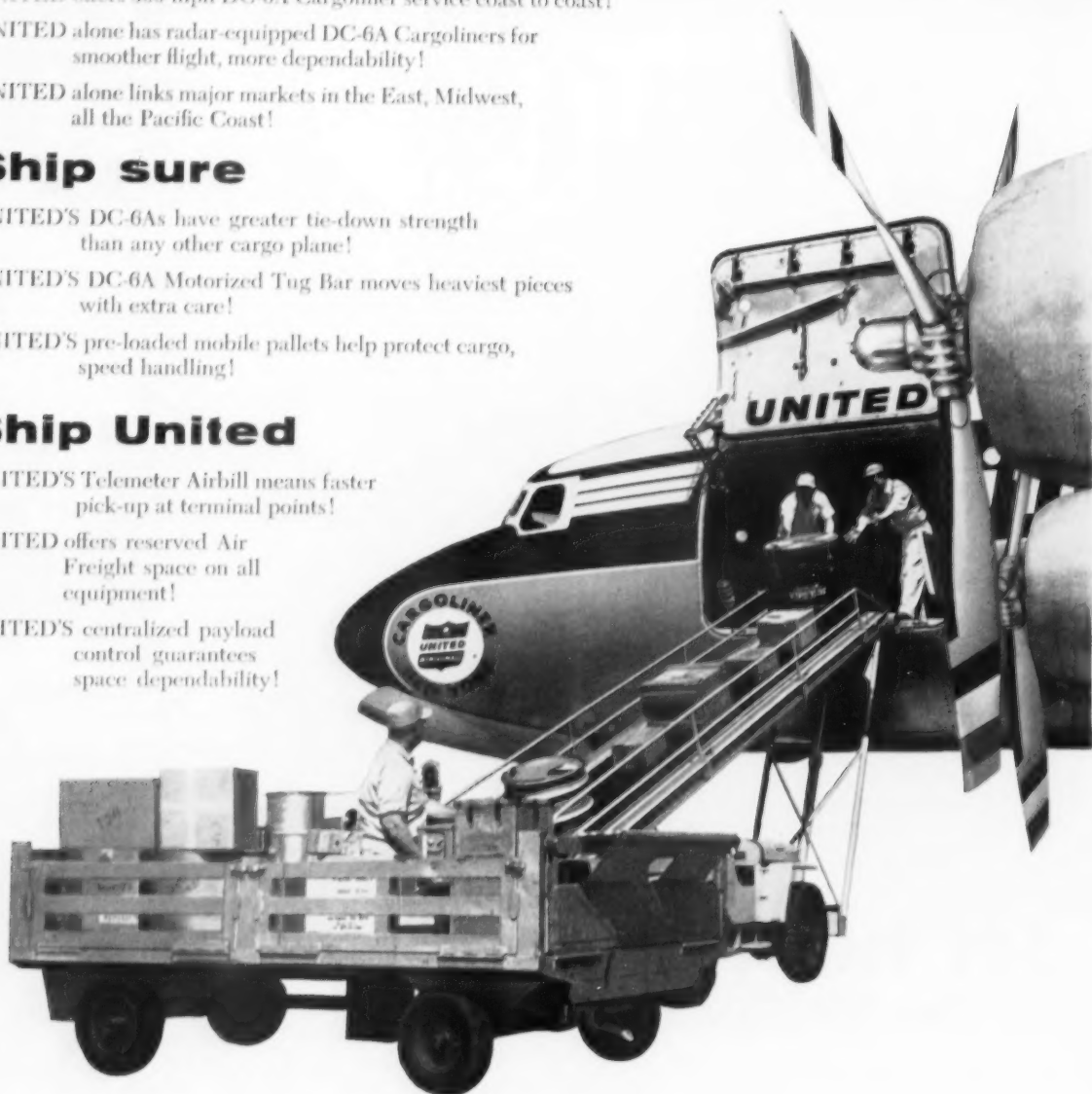
UNITED'S pre-loaded mobile pallets help protect cargo, speed handling!

Ship United

UNITED'S Telemeter Airbill means faster pick-up at terminal points!

UNITED offers reserved Air Freight space on all equipment!

UNITED'S centralized payload control guarantees space dependability!



Examples of United's Low Air Freight rates—

	per 100 lbs. ¹
CHICAGO to CLEVELAND	\$4.78
NEW YORK to DETROIT	\$5.90
DENVER to OMAHA	\$6.42
SEATTLE to LOS ANGELES	\$9.80
PHILADELPHIA to PORTLAND	\$24.15
SAN FRANCISCO to BOSTON	\$27.00

¹These are the rates for most commodities. They are often lower for larger shipments. Rates shown are for information only, are subject to change, and do not include the 3% federal tax on domestic shipments.



For service or information, call the nearest United Air Lines Representative. Write for free Air Freight booklet, Cargo Sales Division, Dept. D-5, United Air Lines, 5959 S. Cicero Ave., Chicago 38.



Chuting The NEWS

AST&T Examination Dates Scheduled for June 14-15

The June, 1956, examinations of the American Society of Traffic and Transportation will be conducted throughout the United States, on June 14-15, at universities and colleges located as conveniently as possible for the registrants. Examination centers can be arranged in the smaller cities if registrations are received early enough.

Applications are available from E. H. Breisacher, Registrar, P. O. Box 2128, Middle City Station, Philadelphia 3, Pa. Registrations will be accepted up to May 23.

Senate Group Conducts Hearings on Controversial Freight Forwarder Act; Carriers, Shippers Object

Hearings on the proposed amendments to Part IV of the Interstate Commerce Act — the Freight Forwarder Act, were conducted April 9-10 in Washington by the Surface Transportation Subcommittee of the Senate Committee on Interstate and Foreign Commerce. The hearings covered three bills introduced by Senator Magnuson, Committee chairman.

The 10th Anniversary meeting of the American Society of Traffic and Transportation will be held in the Fairmont Hotel, San Francisco, Calif., on Sept. 20-21.

Opposing the three bills were the National Industrial Traffic League, and representatives of shipper organizations, railroads, and highway carriers. Testifying in favor of the bills were representatives of the freight forwarding industry.

Briefly, the bills are as follows:

S. 3365 would require certification of freight forwarders. It also would eliminate Subparagraph (d), Section 410, of the Act, which prohibits the ICC from denying forwarder authority solely on the ground that a proposed service would compete with existing forwarder services.

S. 3366 would amend Section 409, Subsection (a) to include a paragraph permitting forwarders to enter into contracts with railroads governing piggy-back service.

S. 3367 would amend Section 411, Subsection (a), permitting freight forwarders to control one or more carriers, with certain restrictions.

Car Demurrage and Storage Committee Restates NITL Objections to AAR Penalty Demurrage Proposals

In response to a request from the AAR's Committee on Demurrage, the National Industrial Traffic League's Car Demurrage and Storage Committee met in Chicago, Ill., early last month to reconsider the AAR's penalty demurrage charges.

Each of the five AAR proposals was considered and found unacceptable by the NITL Committee. The same action had been taken earlier in the year. The proposed AAR action would:

1. Reduce number of cancellable debits under Average Agreement from four to two; require two credits to offset one debit.

2. Eliminate cars loaded and unloaded in intraplant service from Average Agreement and reduce free time for loading or unloading to 24 hours and do not exclude Saturdays in computing time.

3. Increase demurrage rates to \$4 for each of first two chargeable days; \$7 for each of next two

chargeable days; and \$10 each day thereafter.

4. Charge for Saturdays, Sundays and holidays on Straight Plan Cars on same basis as average agreement.

5. Eliminate Note 2 to Section D, Demurrage Rule 2, which provides that cars bulletined on Saturday will be treated as bulletined on Monday.

Chain Store Traffic League Meets in Kansas City

The Chain Store Traffic League has scheduled its 17th Annual Meeting for May 16-19, at the Hotel President, Kansas City, Mo. Grant L. Moran, general traffic manager, Western Auto Supply Co., is chairman of reservations. Ralph A. Bentley, general traffic manager, National Tea Co., is chairman of arrangements.

The Chamber of Commerce of the United States has begun a national poll of affiliated chambers, trade, and professional associations to determine whether they favor increased federal aid to highways.

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Chuting the News . . .

(Continued from Preceding Page)

Association of Interstate Commerce Commission Practitioners to Meet in Philadelphia May 17-18

The Philadelphia, Pa., Chapter will play host May 17-18 when the Association of Interstate Commerce Commission Practitioners gathers at the Bellevue-Stratford Hotel in that city for its 27th Annual Meeting.

The meeting has been planned to cover a broad range of subjects vital to the profession. A number of the nation's leading experts are scheduled to speak or lead panel discussions, including: Robert W. Ginanne, the ICC's new gen-

eral counsel; Commissioner Owen Clarke; Ralph F. Fuchs, professor of law at Indiana University; Frank Mullen, chief examiner, ICC Bureau of Formal Cases, and Paul Coyle, chief of the Section of Complaints, Bureau of Motor Carriers.

Other speakers will include: Former Commissioner Charles D. Mahaffie; Vernon V. Baker, assistant director, ICC Bureau of Finance; Commissioner Robert W. Minor; and Commissioner Rupert L. Murphy.

Dies Suddenly



Dr. G. Lloyd Wilson

Dr. G. Lloyd Wilson, Noted Transportation Expert, Dies

Dr. G. Lloyd Wilson, one of the nation's leading transportation and traffic authorities, died suddenly April 12 in the Philadelphia offices of the Pennsylvania Railroad. He was 59.

Dr. Wilson was chairman of the Transportation and Public Utilities Department of the University of Pennsylvania, and was a frequent contributor to *DISTRIBUTION AGE*.

A widely known transportation expert, Dr. Wilson had been an official of numerous Federal agencies, a consultant to private industry, and the winner of several Freedom Foundation awards for his writings and addresses.

He had been transportation counsel for the United States Steel Corp. since 1944. He had served as director of the FCC's Great Lakes and Inland Waters Survey from 1937 to 1939, and was director of the Rate Division and chief consultant to the U. S. Office of Transportation from 1941 to 1944.

More recently he had been consultant to the Military Traffic Service of the Defense Department, a member of the Transportation Council of the U. S. Department of Commerce, and a consultant to the ICC.

Dr. Wilson was vice president of the Associated Traffic Clubs of America, and educational director of the American Society of Traffic and Transportation.

Legislative Line-Up

Following is a brief summary of legislative items pending in Washington. The status reported is as of April 10.

DISASTER INSURANCE—House Banking Committee has not yet held executive sessions on a disaster indemnity program. Senate Banking Committee awaits report from subcommittee studying disaster coverage.

HIGHWAY CONSTRUCTION—Approval of the roadbuilding measure, H.R. 8836, by House Public Works Committee is expected this month. It probably will be coupled with the road financing bill, H.R. 9075, before reaching the House floor.

HIGHWAY LAWS—Work on H.R. 234, 235, and 2127 is held in abeyance by House Public Works Committee until the construction bill is reported.

PHANTOM FREIGHT—House Commerce subcommittee begins hearings on H.R. 528, in connection with motor vehicle distribution study.

POSTAL RATES—Hearings of indefinite length, interrupted by the Easter recess, are in progress again before the House Post Office Committee on H.R. 9228, the first-class mail rate bill. No new action is seen on H.R. 2988, held over from the first session.

SHIP CONSTRUCTION—Since concluding hearings in March on S. 3223, Senate Commerce Committee has taken no further action on this bill. It would re-establish a revolving

fund to cover federal aid for building of merchant ships.

SHIP MORTGAGES—Awaiting further action after Senate Commerce Committee hearings is S. 3224. House Merchant Marine Committee still has not received the U. S. Commerce Dept. statement on the pending Boggs bill, H.R. 5109.

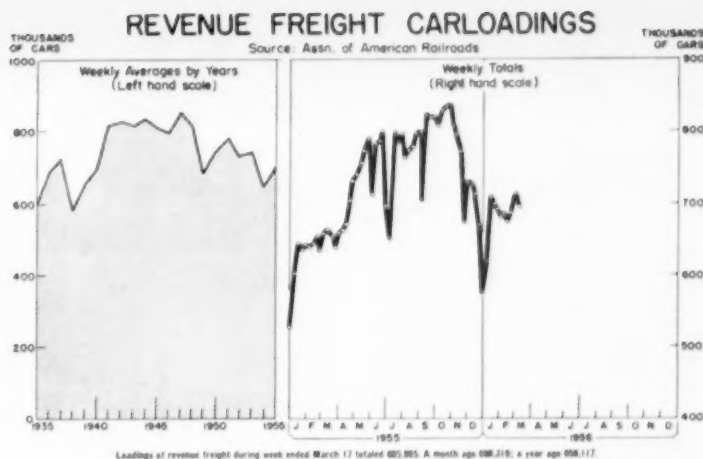
TERMINAL MARKETS—House floor vote has not been scheduled for the Cooley bill, H.R. 4054.

TRANSPORT POLICY—Action begins on April 24, as House Commerce (Harris) subcommittee starts hearings on H.R. 6141. No indication is given by Senate Commerce Committee of hearings on S. 1920.

TRIP LEASING—Smathers bill, S. 898, passed by the Senate, is referred to the House Commerce Committee. No immediate action is projected, but prospects for committee approval later are fairly good.

ATA Council to Meet

Newest developments in trucking maintenance practices — including proposed ICC brake regulations, tubeless tires, mufflers, and power train maintenance — are scheduled for discussion at the Annual Spring Meeting of the ATA's Equipment and Maintenance Council, May 15-18, at the Sheraton Hotel, in Chicago, Ill.



Club Briefs

Miles E. Brown, traffic manager of the Baldwin - Lima - Hamilton Corp., has been elected president of the Ohio State Industrial Traffic League.

Packaging and Corrosion Control was the subject of C. L. Haserot, of the Bray Oil Co., who spoke at the last meeting of the Seattle, Wash., Chapter, SIPMHE.

W. H. Sardo, Jr., of the National Wooden Pallet Manufacturers' Assn., spoke at a recent meeting of the Missouri Chapter, SIPMHE.

Lancaster Chapter No. 26, Delta Nu Alpha, sponsored Transportation Week recently in that Pennsylvania city.

Walter H. Jones, of United States Lines, spoke at an April 10 meeting of the Women's Traffic Club of New York.

Joseph A. DeGeorge, of Waterman Steamship Corp., has been elected president of the Traffic Club of Philadelphia.

At its last meeting Connecticut Alpha Chapter, No. 56, DNA, heard Edward McCabe, of the Pan Atlantic Steamship Co.

Dr. Joseph Rose, professor of Public Utilities at the University of Pennsylvania, spoke at the April meeting of the Philadelphia Chapter, DNA.

Commissioner Rupert L. Murphy spoke at the April 17 meeting of the New York Chapter, Association of ICC Practitioners.

Leon H. Bigger, general manager of the Contract Cartage Co., has been elected president of the Pontiac Traffic Club, Pontiac, Mich.

Thomas F. McGrath is new president of the Traffic and Transportation Club of Philadelphia. Other officers are Bernard J. Weber, vice president, and W. Harry Swank, treasurer.

Edward F. Lacey Succumbs; Former NITL Secretary

Edward F. Lacey, former executive secretary of the National Industrial Traffic League, died March 30 in Tampa Municipal Hospital, Tampa, Fla. Mr. Lacey succumbed of injuries received in an automobile accident on Jan. 31.

Mr. Lacey became active in NITL in 1916, and served as assistant from 1920 until 1935. In 1935 he was named executive secretary, succeeding J. H. Beek. He served in that capacity until his retirement at the close of the League's Annual Meeting, in 1952.

At the time of his death, Mr. Lacey was secretary of the Transportation Council for the Department of Defense. He also served on the Advisory Committee on Transportation Studies of the American University, Washington, D. C.

Digby Pines, Nova Scotia, will be the scene of the 36th Annual Convention of the Canadian Warehousemen's Association.

Section 22 Rate Argument

Reduced Rates Under Section 22, Special Filing Rule, Ex Parte 192, has been assigned for oral argument before the ICC on May 2. The session will open at 9 a.m. in the offices of the Commission, in Washington.

News Briefs

Albert B. Luckey, Jr., Miami Beach attorney, has been appointed transportation counsel for the Senate Interstate and Foreign Commerce Committee.

Slick Airways has filed extensive rate reductions ranging from 15 to 52 per cent on shipments of less than 100 lb in weight.

On May 20-24, thousands of executives and business leaders from all over the world will converge on Philadelphia's Convention Hall to witness the National Office Management Association's biggest show in history.

The Society of the Plastics Industry, Inc.'s Seventh National Plastics Exposition will be held June 11-15 at New York City's new Coliseum.

Class I railroads in 1955 spent \$1,637,075,000 for fuel, materials and supplies, excluding equipment, the AAR has announced. This was an increase of \$212,314,000 compared with such expenditures in 1954.

"Mobile Cranes, Monorails and Conveyors are Key Factors in Pipe Shop Modernization" won first place in the 1955 Wunsch Foundation Contest for John H. Norton and Robert C. Meyer, E. I. du Pont de Nemours & Company, Inc.

A special conference on procurement of capital equipment, including packaging machinery, is scheduled for June 11-13 at the Hotel Statler, New York. It will be sponsored by the American Management Association.

Packaging and its impact upon retail distribution will be highlighted by the National Retail Dry Goods Association at a Packaging Clinic and Exhibit to be held in the Hotel Statler, New York, June 25-27.

"Trends in Transportation" will be the theme for the Third Annual Michigan Traffic and Transportation Conference at Michigan State University May 9-12.

ATA Supports Braking Rules

The American Trucking Association has endorsed objectives of the proposed ICC regulation aimed at preventing braking failures, and has recommended five changes designed to improve effectiveness of the new regulation.

The trucking industry views were presented last month by Lewis C. Kibbee, chief, Automotive Engineering Section, following several meetings of representatives of industry technical committees and of the several conferences affiliated with ATA.

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Chuting the News . . .

(Continued from Preceding Page)

Delta Nu Alpha Meeting

May 19-20 has been set as the date of the Annual Spring Convention of Delta Nu Alpha. The transportation fraternity will meet in Houston, Tex. Commissioner Everett Hutchinson will speak at a special luncheon. The program also will feature a panel discussion on "Traffic and Transportation Education, Its Value to Industry and Commerce."

Members of the panel will include: E. G. Plowman, John W. Scott, Lawrence A. Pomeroy, Jr., John R. Mahoney, C. J. Goodyear, and Lowe P. Siddons, all prominent industrial traffic managers.

ATC Prize Winners Named

Harry G. Crafts, of the Transportation Club of Dallas, and Fritz R. Kahn, of the Traffic Club of Washington, have been announced as first place winners in the latest essay contest sponsored by the Associated Traffic Clubs of America.

Crafts took the affirmative side of the argument in "Why Change the National Transportation Policy," and Kahn took the negative. Copies of the prize-winning essays may be obtained by writing A. W. Greene, Industrial Traffic Advancement Committee, Chilton Bldg., Chestnut & 56th Sts., Philadelphia, Pa.

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Coming Events

May 8-10—Sixth Highway Transportation Congress of the National Highway Users Conference, Washington, D. C.
May 9-11—Western Material Handling Conference & Equipment Show, Livestock Exhibit Bldg., Los Angeles, Calif.
May 10-12—National Rivers & Harbors Congress, 43rd National Convention, Washington, D. C.
May 13-19—Regular Common Carrier Conference, American Trucking Assn., Edgewater-Gulf Hotel, Edgewater Park, Miss.
May 15-16—Eastern Industrial Traffic League, Inc., Semi-Annual Meeting, Philadelphia, Pa.
May 17-18—Association of Interstate Commerce Commission Practitioners, 27th Annual Meeting, Philadelphia, Pa.
May 19-20—Delta Nu Alpha Transportation Fraternity, Inc., Annual Spring Meeting, Houston, Tex.
May 20-24—National Office Management Assn., Office Machinery & Equipment Exposition, Convention Hall, Philadelphia, Pa.
May 22—Southwestern Industrial Traffic League, Annual Meeting, Galveston, Tex.
June 5—Texas Industrial Traffic League, Annual Meeting, Dallas, Tex.
June 5-8—The Material Handling Institute's Exposition of 1956, Cleveland Public Auditorium, Cleveland, Ohio.
June 11-13—Packaging Conference, American Management Assn., Hotel Statler, New York, N. Y.
June 11-15—Seventh National Plastics Exposition, New Coliseum, New York, N. Y.
June 17-30—Third Annual Materials Handling Training Conference, Lake Placid, N. Y.
June 20-21—Executive Committee, ATA, Washington, D. C.

June 25-27—Packaging Clinic & Exhibit, National Retail Dry Goods Assn., Hotel Statler, New York, N. Y.
July 2-5—Canadian Warehousemen's Assn., 36th Annual Convention, Digby Pines, Nova Scotia.
July 10-12—Sixth Western Packaging & Materials Handling Exposition, Pan Pacific Auditorium, Los Angeles, Calif.
Aug. 5-8—Movers Conference of America, Annual Meeting, Chicago, Ill.
Sept. 10-12—Packaging Institute, Annual Forum, Statler Hotel, Cleveland, Ohio.
Sept. 11-14—Packaging Machinery and Materials Exposition, Pan-Pacific Auditorium, Los Angeles, Calif.
Sept. 13-15—Annual Convention, Southeastern Warehousemen & Movers' Assn., Balmoral Hotel, Miami Beach, Fla.
Sept. 17-21—11th Annual International Instrument-Automation Conference & Exhibit, New Coliseum, New York, N. Y.
Oct. 17-23—Regular Route Common Carrier Conference, ATA Annual Membership Meeting, New York, N. Y.
Oct. 21-26—American Trucking Assn., Annual Meeting, New York, N. Y.
Oct. 23-25—SIPMHE, Annual Convention Exposition, Short Course and Competition, Kiel Auditorium, St. Louis, Mo.
Oct. 24-25—Associated Traffic Clubs of America, 33rd Annual Meeting, Miami Beach, Fla.
Oct. 29-31—Truck Body Equipment Assn., Annual Convention and Exhibit, Sherman Hotel, Chicago, Ill.
Oct. 31-Nov. 1-2—Time & Motion Study and Management Clinic, Industrial Management Society, Hotel Sherman, Chicago, Ill.

MEN IN THE NEWS

Traffic

William C. Brittain—named manager, Transportation Research & Development Section, Traffic & Transportation Dept., Koppers Co., Inc., Pittsburgh, Pa.



Koppers recently established TR&DS, which it claims is the first formally organized unit of its kind in American industry. The staff also includes **Walter J. Keneski**, transportation analyst; **James A. Jordan**, management analyst, and **John G. Brodie**, assistant transportation analyst.



Jonathan C. Baker—named general traffic manager, Summers Fertilizer Co., and Northern Chemical Industries, Baltimore, Md.

C. S. Connolly—named assistant vice president in charge of traffic, Carnation Co., Los Angeles, Calif.

James F. Howe, assistant director of Ford Motor Co.'s general traffic office—honored for 40 years of service at a testimonial dinner.



T. Harold Daniel—appointed traffic manager, P. H. Hanes Knitting Co., Winston-Salem, N. C.

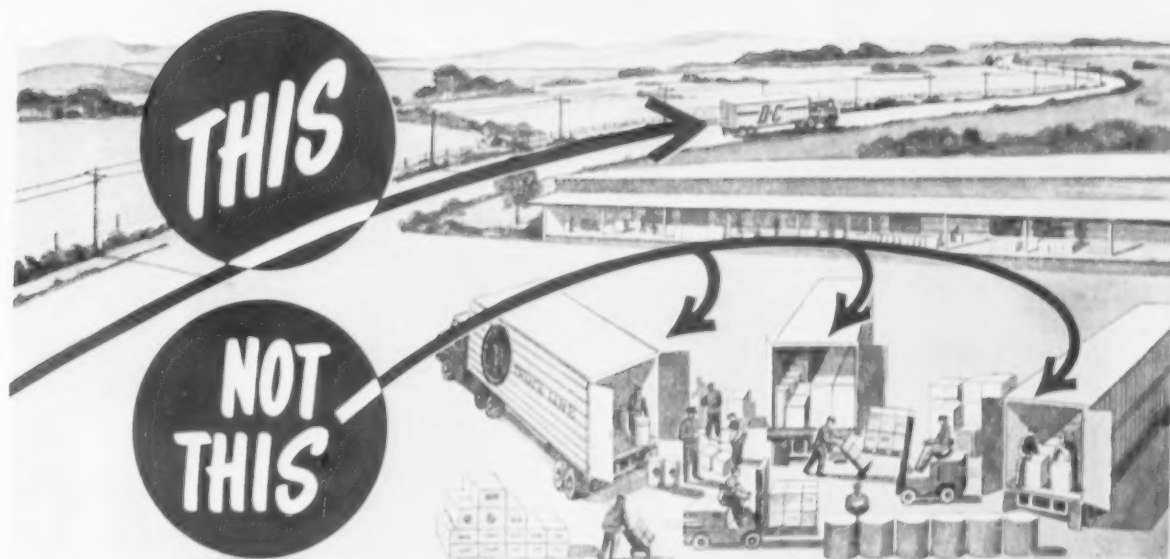
Thomas C. Stewart—new traffic manager, Zenith Radio Corp., Chicago, Ill.

D. F. McDonald—named assistant director of traffic, General Mills, Inc., Minneapolis, Minn. **R. A. Fitzgerald**—named plant traffic manager at Chicago, Ill.

C. A. Lawrence, general traffic manager, American Motors Corp., elected chairman of the Traffic Committee of the Automobile Manufacturers Assn., Detroit, Mich.

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SINGLE CARRIER RESPONSIBILITY ACROSS THE NATION with D·C



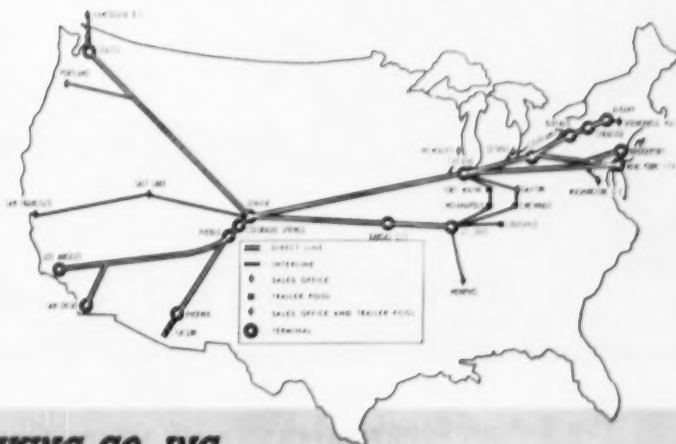
***The Only COAST-TO-COAST CARRIER
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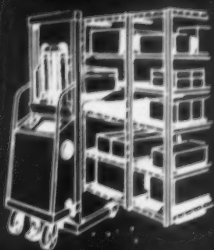
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Denver Chicago TRUCKING CO., INC.

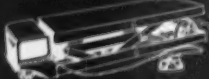


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500 TO 1000 LB. LIFTER

For quick easy stacking of loads

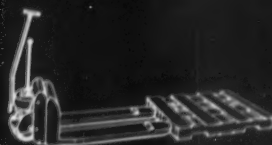


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For leveling sheet steel or dies at shears or press.



POWERED BELT CONVEYORS PORTABLE CONVEYORS



THE LEVER LIFT

with fingertip lifting lever and lowering control

EASY VERTICAL LIFTING

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SMOOTH HORIZONTAL ROLLING

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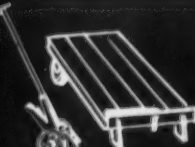
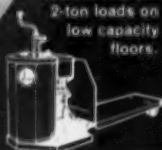
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CASTERS

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HANDLER

Lifts, transports 2-ton loads on low capacity floors.



LIFT JACK TRUCK

No. 6712



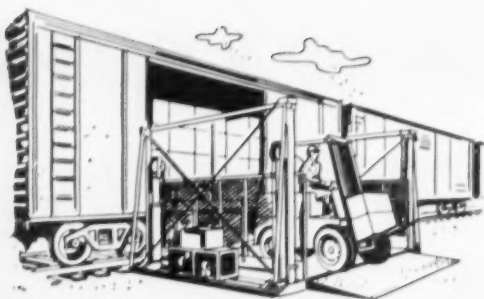
DRUM HANDLING TRUCK

No. 6055



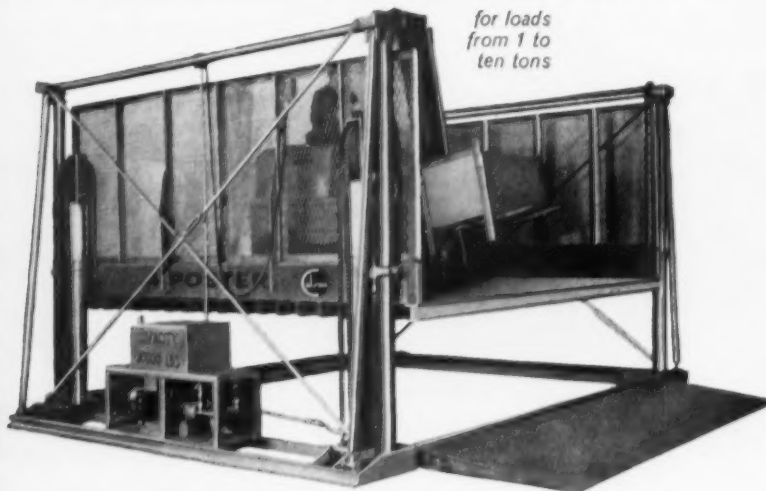
IN LINE TRUCK

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The Colson
"4-Poster"
a portable lifter ...
completely hydraulic ...
for electric or gas power

ELIMINATES COSTLY FREIGHT LOADING RAMPS, DOCKS, PITS!



for loads
from 1 to
ten tons

Raise or lower loaded fork trucks or other heavy loads economically and quickly to any truck or freight car height with this Colson "4 Poster". Designed for continuous use for lifting heights up to 17 feet ... the "4 Poster" is a low investment, economical unit which eliminates many permanent dock ramp or pit installation problems!

- Portable—eliminates delay of extra car or trailer spotting!
- Reduces excessive battery drain caused by ramp climbing!
- Avoids slippery ramp and open pit hazards!
- Saves the space used by long ramps!
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- Hydraulic unit—electric or gas powered for inside or outside use.

Write or phone for recommendation by specialists

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Mr. Freight "rides the plush" too!

In ensuing months, The Milwaukee Road emblem you see at the bottom of this ad will be stenciled on 1,250 more brand new smooth-rolling freight cars. There'll be 1,000 50-foot steel boxcars, 100 covered hopper cars, 50 air-slide covered hoppers, 50 compartmentizer-equipped insulated boxcars and 50 mechanical giant refrigerators with roller bearings.

These cars, which would extend 12 miles if placed in a single train, are evidence of The Milwaukee Road's continuing determination to give the very important Mr. Freight a fine ride like Miss Passenger.



Johnny Careful says:
"Let's hold down loss and damage."



And considering the new "Pullman" accommodations, the bowling alley smoothness of the track, and the fast, jolt-free performance of all-modern diesel and electric power, Mr. Freight darn near gets such a "Pullman" ride on the Milwaukee!

The Milwaukee Road serves all the West and all America, too. And getting down to cases, please note this. You can by-pass the Chicago Terminal by specifying "Terre Haute Division" and expedite transfer with lines to and from the East and South.

Treat Mr. Freight right. Route him via
The Milwaukee Road!

J. M. CUNNINGHAM
General Freight Traffic
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Another Industrial Leader...

J. I. CASE CO.

continues to build with

LURIA Buildings



Only LURIA offers you the **SPEED** and **ECONOMY** of **STANDARDIZATION**...plus all the **ADAPTABILITY** and **DURABILITY** of **CUSTOM-DESIGNED UNITS**

For J. I. Case, famed manufacturer of farm machinery, a total of 19 Luria structural steel buildings! And Luria's re-order record with other industrial leaders is equally impressive... because Luria Buildings deliver such impressive performance. Each structure surpasses the most stringent building codes. Each represents substantial savings. Each is adaptable to individual requirements. These are the reasons why Luria Standardized Buildings can meet the needs of your expansion program. Discuss it with your Luria representative.

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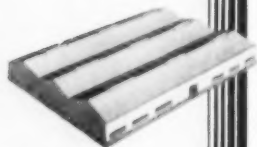
Storage Building for J. I. Case Co., Racine, Wisconsin



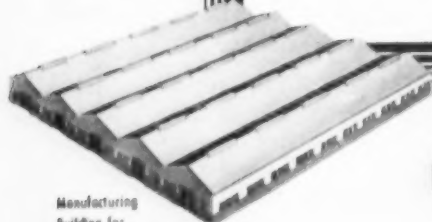
Warehouse and Loading Dock for J. I. Case Co., Bettendorf, Iowa



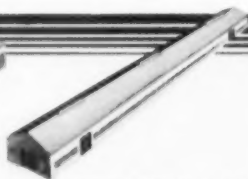
Manufacturing Building for J. I. Case Co., Anniston, Alabama



Branch Showrooms and Warehouse for J. I. Case Co., Houston, Texas



Manufacturing Building for J. I. Case Co., Stockton, California



Storage Building for J. I. Case Co., Racine, Wisconsin



Tractor Development and Testing Building for J. I. Case Co., Racine, Wisconsin



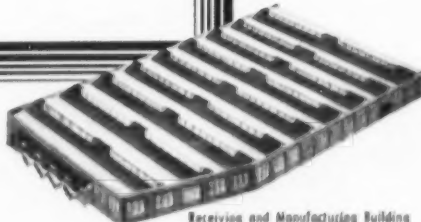
Tool & Pattern Shop for J. I. Case Co., Anniston, Alabama



Maintenance Building for J. I. Case Co., Rockford, Illinois



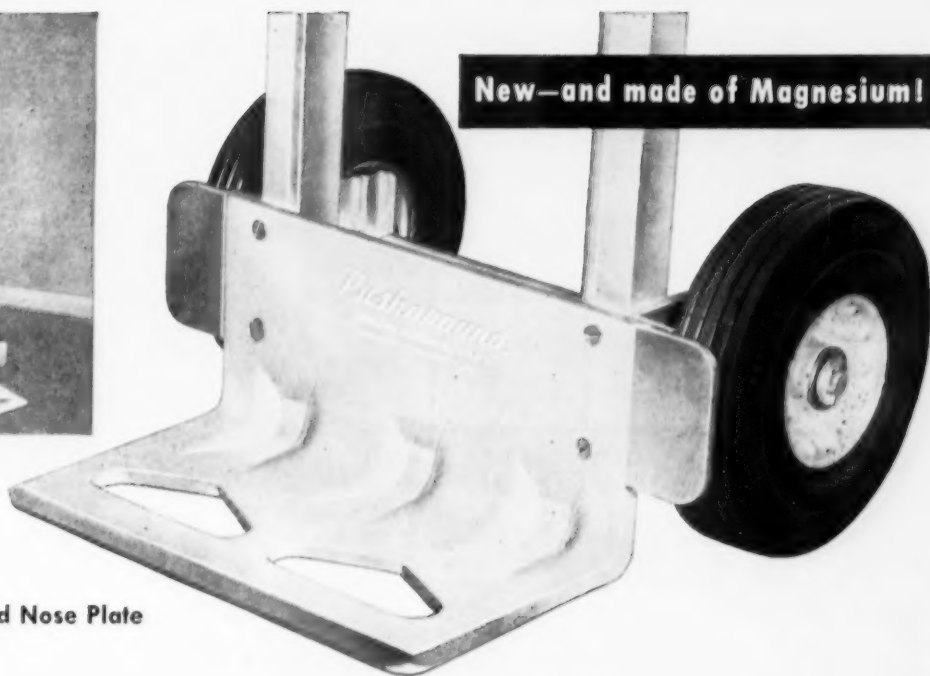
Platform Shed for J. I. Case Co., Burlington, Iowa



Receiving and Manufacturing Building for J. I. Case Co., Racine, Wisconsin

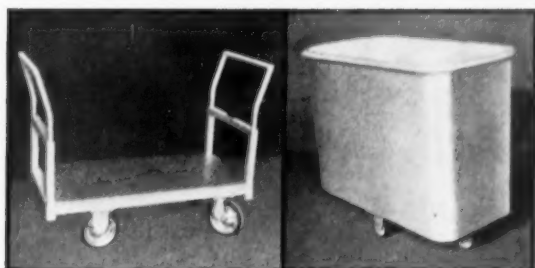
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It's a tough piece of equipment— the Pusharound® Hand Truck



The platform truck (left) and the bin truck (right) are two more light and tough Pusharound products that can help you move heavy objects—easily.

Whatever your need for handling equipment may be—consider the uses you have for any or all light, rugged Pusharound products. In addition to warehouse, terminal and retail uses, the platform and bin trucks pictured above are ideal for handling heavy parts and industrial equipment. The Pusharound bin truck is designed to handle 500 lb. loads, while the platform truck is available in two model variations to handle either 500 or 1200 lb. load capacities.

Because the nose plate is the part on every hand truck that takes most of the load—the nose plate on the Pusharound hand truck is forged, not cast. It is not brittle and *will not break, even under the most punishing conditions.*

And there are no "makeshift" parts on the Pusharound hand truck. Side rails, yokes, axle brackets—all are special Brooks & Perkins' extrusions designed exclusively for Pusharound hand trucks. Protective wheel guards prevent damage to boxes, cartons, bags—anything you handle. Every model is adaptable to 6", 8" or 10" wheels.

It's a tough piece of equipment—the Pusharound hand truck. Write for a Pusharound catalog and for the name of our dealer in your area.

Pusharound®

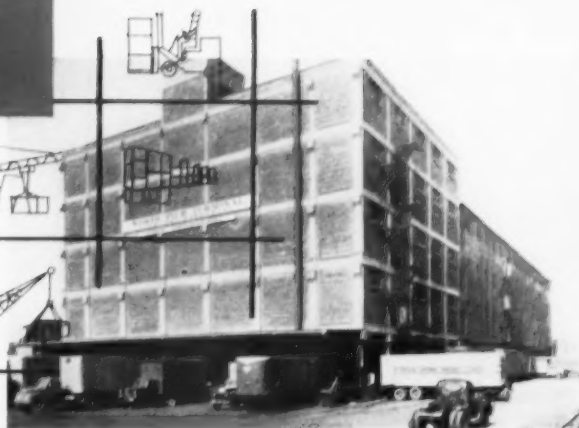
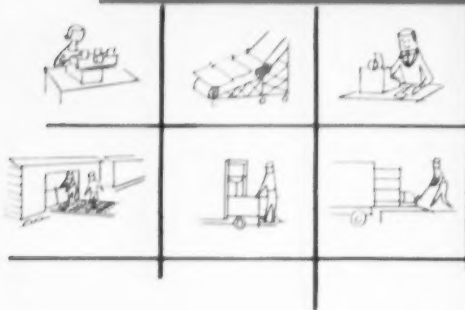
MAGNESIUM HANDLING EQUIPMENT

HAND TRUCKS • PLATFORM TRUCKS • SHELF TRUCKS • BIN TRUCKS
TRANSFER TRUCKS • GARMENT RACKS • MOBILE CABINETS AND RACKS

BROOKS & PERKINS, INC.

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DEALERS IN PRINCIPAL CITIES
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STORAGE is simple...
it's the **INS** and **OUTS**
that count



NORTH PIER TERMINAL

*Streamlines Distribution and Handling
with Cost Cutting AUTOMATION*



W. W. Huggett
President

- You want safe, convenient storage—and that's not too hard to find. But, dependable, efficient product distribution is your main goal—yes, your main worry. That's our business at North Pier Terminal.

We've upped product distribution efficiency to all-time highs—and you know the results of increased efficiency: it never fails to cut costs. What's more, we've cut your shipping and distribution worries to the bone.

How? Efficient planning, tailored to your individual needs by experts—from paper work to the movement of your merchandise—AND, most important, the use of AUTOMATION in strategically located warehouses to carry out the plan.

You can ship your goods to us and forget your warehousing and distribution worries. Your goods will be stored safely, will move promptly, where and when you say—in large lots or small—all at a money saving that only experienced planning and automation can provide. **FIND OUT** what North Pier Terminal can do for you. Call SUPERIOR 7-5606; or, send for our folder of facts.

Strategic Chicago Locations

NORTH: 2740 Clybourn Ave. Northwestern and Milwaukee rails. 200,000 sq. ft.; 25-truck, 12-car covered loading area.

SOUTH: 95th & Cottage Grove. Mainline Ill. Central R.R., connects north, south & west rails. 100,000 sq. ft. unlimited floor load area; trucks & cars loaded and unloaded inside.

DOWNTOWN: 120 E. So. Water St., one block from Mich. Ave. N.Y.C.R.R. Heavy floor load; ample space for cars & trucks.

In addition, we offer warehouse and office space in our main building on Lake Shore Drive; a barge dock at 29th & Western, and a ship dock at 400 E. So. Water St.

Ask for complete information on how your distribution can be made less costly; how your storage can be more convenient. Write, wire or phone our main office, SUPERIOR 7-5606.

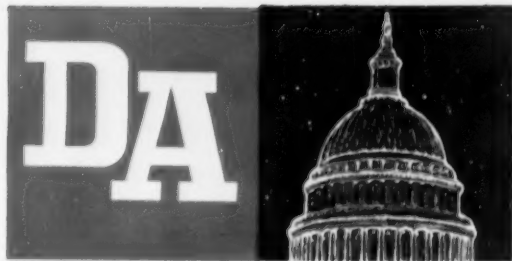
LARGEST AND BEST LOCATED WAREHOUSE BUILDINGS IN ALL CHICAGOLAND
North Pier Terminal Co.

Executive Offices: 444 N. Lake Shore Dr., Chicago 11

SUPERIOR 7-5606

See our complete listing in the Classified section, a total of 8 locations . . . to serve your every need.

WASHINGTON



By Ray M. Stroupe, *Chilton Washington News Bureau*

AIRFREIGHT CARRIERS PAY THE BILL—

Air cargo carriers who accept the Navy offer to lease 23 of its cargo planes will have to pay the cost of reconditioning them before putting them into service. These R4D-R aircraft are being put at the disposal of carriers to aid development of the air transport industry, says the Navy. But the planes are veterans of long service and require major overhauls.

REDUCE LOSS CLAIMS—

Motor freight carriers are reducing loss and damage claim expenses, compared with their revenues. A check of 94 truckers by the ATA reveals the ratio of claims paid in relation to gross revenues last year was 0.97, compared with 1.02 in 1954 and 1.18 in 1953. Firms surveyed, with gross earnings of \$593.6 million in 1955, paid \$5.5 million in claims.

RAIL CONTROL BID ARGUED—

Arguments over control of the Central of Georgia Ry. Co. claimed attention of the ICC in April. Strengthening its bid for control, the St. Louis-San Francisco (Frisco) Ry. Co. recently obtained a majority of the Central's common stock. Public service commissions of both Georgia and Alabama tell the ICC they favor the Frisco bid.

TRAILERSHIP PROJECT INSURED—

Bolstered by a new U. S. Maritime Administration action is the program to increase truck-trailer hauling by ship. The agency agrees to insure up to \$4.1 million of the mortgage on a landing ship hull that will be converted to accommodate loaded trailers. TMT Trailer Ferry, Inc., of Miami, will operate the converted vessel between Florida and Puerto Rico.

SIGNS CHANNEL BILL—

Faster shipping between New Orleans and the Gulf of Mexico is aimed for in a bill signed by President Eisenhower. Without authorizing funds, it permits dredging of a sea level channel far shorter than the Mississippi River route from the city to the Gulf. If Congress grants some money at this session, Corps of Engineers will begin drawing blueprints for the \$88 million project.

ALASKA AID URGED—

Provisions for car ferry service by private carrier from the West Coast to Alaska get a renewed blessing from the U. S. Interior Dept. The agency also is working on a system of surfaced roads from Valdez, Alaska, to inland points. In addition, it sponsors an action before the

ICC to eliminate certain domestic rail rates described as discriminatory against the Territory.

TRANSPORT POLICY HEARINGS—

Getting the transport policy bill hearings started in Congress last month may have been less of a chore than getting them stopped. Dozens of requests from groups wishing to testify deluge the House Commerce (Harris) subcommittee, which scheduled hearings to begin April 24. This interest is not to be reflected in any substantive action on transport policy this year, however.

ICC PREPARES CAR STUDY—

Freight car practices followed at Brooklyn piers are to be investigated by the ICC. Listed for examination are terms of agreements covering car handling, reclaim allowances, car detention, and interchange of freight between trunk lines and short lines serving the piers. ICC says it is making the study as a basis for reasonable rules over use, control, supply, and prompt return of cars.

FAST TAX WRITE-OFFS—

Some aid to transportation industry expansion may come from the Office of Defense Mobilization. ODM is studying 85 fast tax write-off applications in 25 categories, held up since last September. Among them are write-off requests for expanded terminal structures; warehousing, storage, and port facilities; diesel locomotives; rail passenger cars; and inland waterway vessels.

DENY FTC PACKAGING COMPLAINT—

Government charges of illegal price setting are denied by 20 leading manufacturers of multiwall paper shipping sacks. All the firms state to the Federal Trade Commission that they do not conspire to quote the same delivered price to their customers. FTC, in its complaint against the companies last December, said they account for nearly all production of the multiwall sacks.

RAIL INCOME DIPS—

Measurement of Class I rail lines' net income by the AAR shows a decline from the early 1955 figures. Operating revenues were up by 11.2 per cent in January and February, but expenses advanced 12.8 per cent. Result was a slide in net income from \$98 million in the first two months of 1955 to \$93 million in the corresponding months this year.

(Please Turn to Page 123)

MOTO-TRUC *Instant Power...*

...like the "FLICK" of a light switch



*The MATERIAL HANDLING
INSTITUTE'S EXPOSITION
Cleveland, Ohio*

PUBLIC AUDITORIUM
JUNE 5th THRU 8th
1956



**BOOTH
416-417**



Model Pal
(4,000 to 6,000 lbs. capacity)



The MOTO-TRUC Co.

Representatives in Principal Cities

1956 E. 59th St. • Cleveland 3, Ohio

Pallet... Platform... Hi-Lift Trucks

The Originators of the Walkie and
Small Rider Type Trucks.

MOTO-TRUC offers amazing efficiency with
INSTANT ACTION! (Two speeds, forward
and reverse.)

This **INSTANT ACTION** transmits power to
the drive wheel with a minimum of moving
parts. MOTO-TRUC design "pays off" with
less maintenance . . . and years of trouble
free operation.

Remember . . . MOTO-TRUC originated the
walkie and small rider type trucks . . . and
**THERE'S A MOTO-TRUC FOR EVERY PUR-
POSE.** Send for Bulletin No. 53 covering the
complete line.

Circle No. 13 on Card, Page 53, for more information



Finishing touch to a perfect move...

*Exceptional follow-through at destination
makes GREYVAN PREFERRED for nationwide moving*

Household Goods
•
Office Furnishings
•
Trade Show Displays
•
High-Value Products

It's the finish that counts most in making transferred personnel happy with their move, thereby enabling them to fit into their new surroundings so quickly and easily it almost seems as if they had never moved.

That's one of the reasons why so many traffic managers—and the people they transfer—prefer Greyvan service.

It's reassuring to know that a skilled Greyvan representative will be available at destination to see that delivery instruc-

tions are followed to the letter—handle any special service problems that may occur—make an on-the-spot settlement of almost any claim that may arise.

Give your personnel the benefit of Greyvan's long experience, modern equipment, advanced methods, and personal interest. Call your local Greyvan representative for complete information.

GREYVAN LINES, INC.

57 West Grand Avenue, Chicago 10, Illinois

See Classified Telephone Directory for nearest office

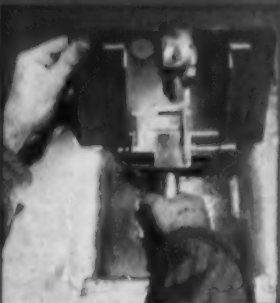
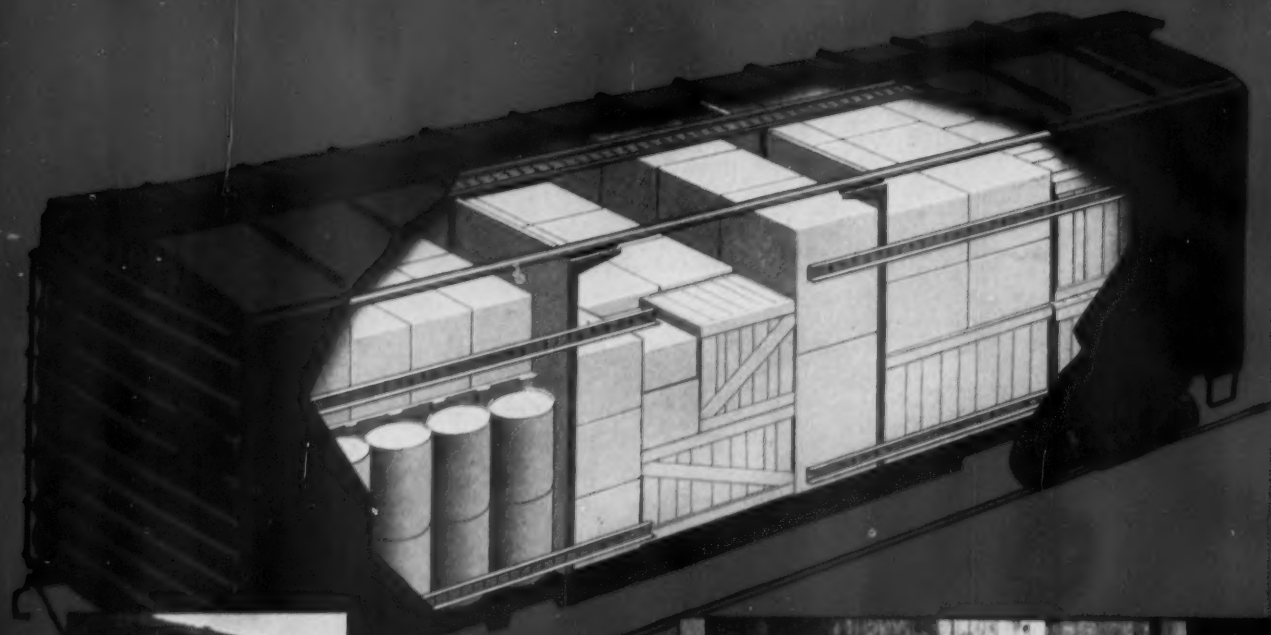


A Greyhound Lines subsidiary . . .

Greyvan is one of America's leading long-distance moving companies . . . provides dependable, responsible, efficient service by skilled, courteous personnel, using America's most modern moving methods and equipment.



VERSATILE P-S



a P-S Compartmentizer consists of two pairs of rugged steel gates. Positioned against the face of the load, they prevent damage-causing shifting due to rough car handling. The gates divide a box car into three compartments, each of which is completely separate and can be locked. This means less loss, pilferage and mix up.

P-S Compartmentizer gates are easily positioned. Only one man is needed to slide Compartmentizer gates into position for either loading or unloading. If desired, gates can be moved to extreme ends of the car, eliminating compartmentizing and allowing entire car storage for a single load.

P-S Compartmentizer gates are easily and positively locked or unlocked by one man. Each gate is double hinged at side walls. And each gate is locked in position by four strong steel bars that project into flush keepers mounted in the floor, roof and sides. There are no projections to damage loading, no loose operating parts to lose or mislead. Simplified-on operating instructions can be easily understood.



No matter whether the loading is Car Load, L.C.L., or Stop-Off, the P-S Compartmentizer serves equally well. Labor requirements for loading and unloading a Compartmentizer-equipped car are reduced.



This photograph shows cartons of canned food stocked in the center section of box car. P-S Compartmentizer gates in the background separate the foreground cartons from other loading.

COMPARTMENTIZER

*this new lading protection box car accessory
saves you money on damage, dunnage, labor and handling*

THE VERSATILITY of the P-S Compartmentizer as a lading protection device is proved by the wide range of shipments it safeguards. Any containers, crates, cartons, bags, drums, bales, strapped lots and bundles, whether palletized or not, can be protected behind the rugged P-S Compartmentizer gates. The need for extensive dunnage is eliminated while loading and unloading time is materially reduced. In addition, segregation prevents loss or mix up, and cuts down chances for pilferage. The P-S Compartmentizer has frequently suggested ways in which packaging economies can be realized. No matter how varied in size and shape your shipments may be, they will reach the con-

signee in better order if you ship them in a P-S Compartmentizer-equipped box car.

The service-conscious railroads who are including P-S Compartmentizer-equipped box cars for their shippers are: Baltimore & Ohio; Central of Georgia; Chicago, Burlington & Quincy; Chicago & Great Western; Great Northern; Chicago, Milwaukee, St. Paul and Pacific; New York Central; Pennsylvania; Seaboard Air Line; and Western Pacific. Like Fruit Growers Express, Merchants Despatch finds that the P-S Compartmentizer protects lading, saves time, labor and money. A qualified Pullman-Standard representative will be pleased to discuss lading protection with you.

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON



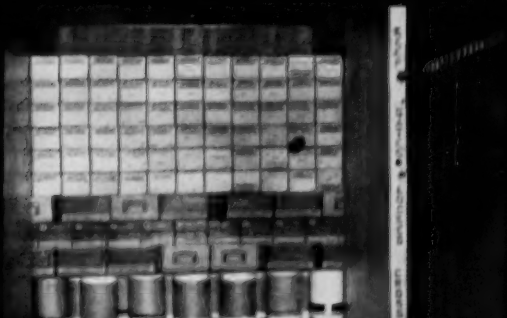
Cartoned canned goods such as these are only one of the many types of lading that the P-S Compartmentizer protects. Note the absence of dunnage. This means real time and money savings for the shipper and consignee.



This compartmentized assortment of items proves that uniform containers are not a requirement. In addition to barrels, the shipper included heavy coils of chain products with lightly protected wire-bound crated merchandise.



Heavyweight loads of tin plate travel securely behind Compartmentizer gates. In this instance the plate has been bound by strapping and palletized to make handling by lift truck quick and easy. Minimum dunnage was required.



Mixed loads of assorted containers are readily loaded for safe shipment behind P-S Compartmentizer gates. Size and shape of the lading does not limit Compartmentizer versatility.

CUT TRUCK COSTS



HEAVY-HAULING job in heavy city traffic—perfect spot for the White 3000. Pennoyer Merchants Transfer Co., Chicago, like other machinery movers and heavy haulers throughout the country, have found decided advantages in operating the White 3000. Exclusive advantages in vastly improved maneuverability and time saving . . . profitable weight distribution for extra carrying ability . . . savings in operating cost over *more* years. Investigate these important advantages of the White 3000 for your business . . . today!

THE WHITE MOTOR COMPANY
Cleveland 1, Ohio

Pennoyer, longtime White user, now has a fleet of 20 Whites handling all kinds of big hauling jobs in the Chicago area.

FIRST—IN THE FIELD



**PROVED IN BILLIONS
OF LOW-COST MILES**

FOR MORE THAN 55 YEARS THE GREATEST NAME IN TRUCKS

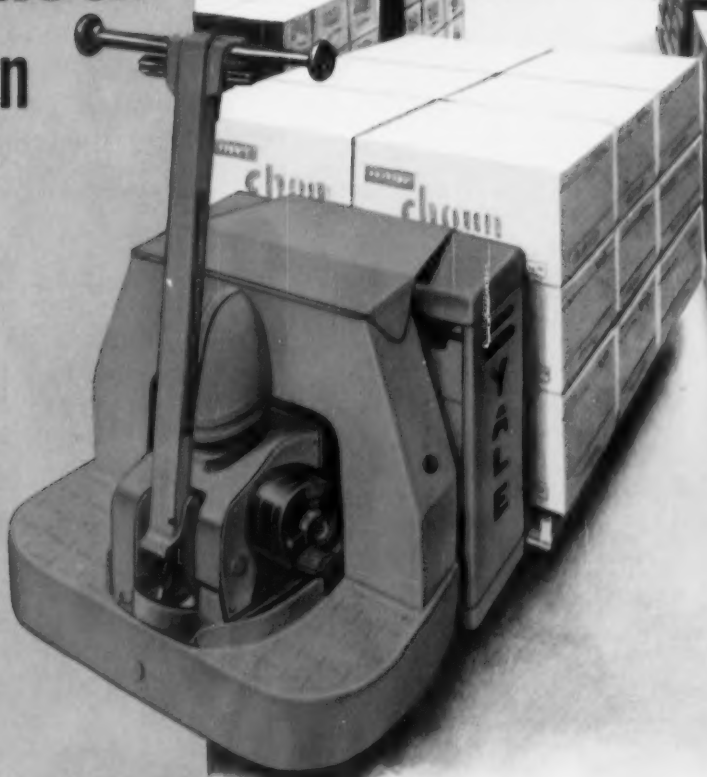


Circle No. 15 on Card, Page 53, for more information

DISTRIBUTION AGE

e x c l u s i v e

new
YALE
PALLET TRUCK
design



more power . . . easier to maintain . . . more maneuverable

The **NEW** YALE *WORKSAVER*.

The New Yale Worksavers are available in 4,000 and 6,000 lb. capacities with either short or long battery compartment.



• HIGH CAPACITY BATTERY FOR EXTRA POWER

New Yale Worksavers are available with either short or long battery compartments. Both models accommodate extra-capacity batteries for greater output and quick response to power demand. The short compartment takes a 6-cell, 13 plate battery to provide adequate power for an 8 hour operation. The long compartment houses a 6-cell, 25 plate battery for handling operations with extra power requirements equally suitable for nickel alkaline batteries. Maximum battery protection is assured by a completely enclosed battery compartment while hinged covers make battery service easy.

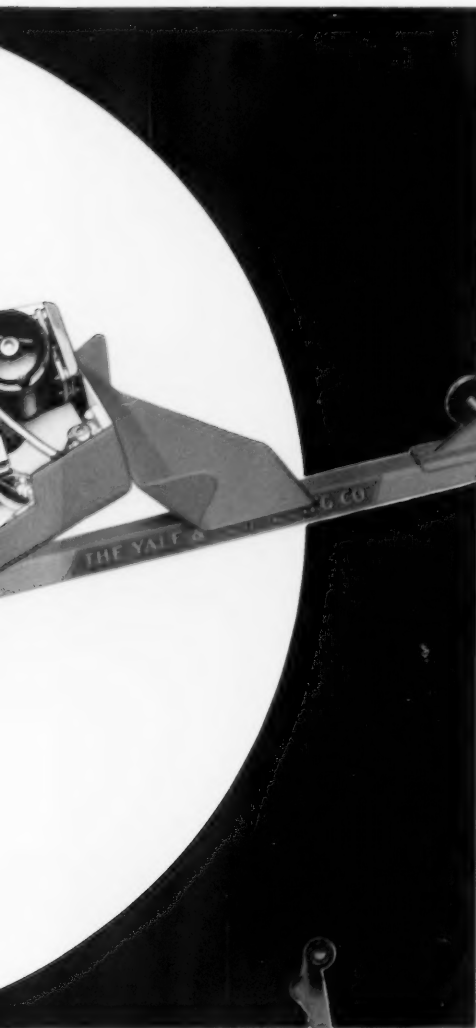
• GREATER UNDERCLEARANCE EASES RAMP W

Elevating linkage uses compression tubes to actuate pallet wheels. L high in the forks these tubes make possible a pallet fork underclear greater than 5". Front-end underclearance always remains 3" wheth truck is in raised or lowered position. This extra grade clearance makes work much easier for the operator.

Compression tubes for lifting high up in forks for pro and good ground clearance



R... point by point the best pallet truck



• **HIGH MANEUVERABILITY** — Equipped with short battery compartment, the new Work saver is only 24" longer than the load . . . only 33" longer than the load with a long battery compartment. Both size battery compartments are shorter than ever . . . give the new Work saver the compactness that cuts down "lost space".

• **MAXIMUM LOAD STABILITY** — Twin vertical lifting cylinders provide load rigidity even under toughest load conditions. Stability in travel and turning with the new Work saver is achieved by maintaining a low center of gravity.

"BREAKAWAY" Feature Simplifies Maintenance

Hoist motor swings out for quick cleaning and brush renewal . . . contactors with time delay unit can be checked through battery compartment . . . drive tire can be replaced in only 20 minutes without disturbing the drive unit . . . all lubrication fittings can be serviced without removing any covers or turning truck over. Just remove two pins and the entire front compartment swings back (see above illustration). Without removing covers every mechanical and hydraulic unit thus becomes accessible for quick and easy maintenance.

The removal of two pins permits one man to swing back the entire front compartment.

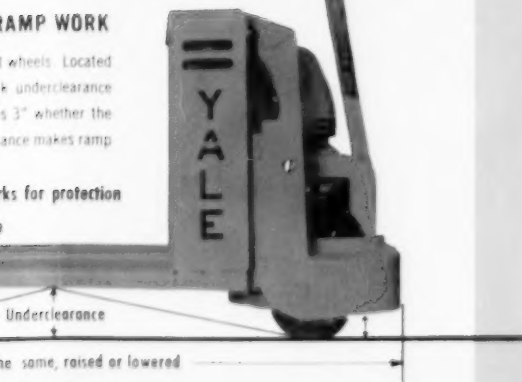


RAMP WORK

wheels. Located
k underclearance
s 3" whether the
ance makes ramp

ks for protection

Underclearance
the same, raised or lowered



• **SMOOTH TRAVELLING** — Two speeds forward and reverse — with automatic time delay between speeds — give smooth acceleration. Dual-acting braking system for controlled braking action. Smooth starts and stops prevent toppling of loads . . . reduce breakage . . . provide maximum safety for the operator.

• **EFFORTLESS STEERING** — Drive unit is mounted on widely separated tapered roller bearings and large-diameter ball bearing turntable. Wide-spread, dual-type trailing wheels assure better load distribution . . . make turning easy.

• **EASY REACH OF ALL CONTROLS** — Speed control by dual cams. Simple pushbutton control for lifting is located on the handle. Controlled lowering by footpedal. Balanced steering handle shuts off power and applies brake when in full up or full down position.

Choose the Yale Worksaver "best for you"

If your materials handling operation calls for a truck that is light in weight, small in size and has plenty of power, the answer is a Yale Worksaver. For here is a truck specifically designed to speed handling in areas where space is at a premium. And, Yale's complete line of Worksavers lets you choose the model exactly suited to your handling needs. Whether you choose a pallet, platform, tractor or high lift fork model, you know that from the very first day your Worksaver goes into operation, savings in space, time and manpower begin. To find out more about Yale Worksavers write The Yale & Towne Manufacturing Co., Philadelphia 15, Pa.

YALE | Industrial Lift Trucks
and Hoists



TRUCK operators, both private and for-hire, are raising many questions about the pending national highway rehabilitation bill. The nature of these questions indicates not only a desire for a better understanding of the provisions of the program but, also, to determine its effect on truck transportation costs.

The volume of questions directed to DA editors indicates the need to cover the subject again, point by point, for the benefit of all readers. In keeping with the original inquiries, the following explanatory data is presented:

The No. 1 Question

The most frequently asked question has to do with the increased cost of truck operation. The gist of all questions dealing with this point, from private as well as for-hire carriers, can be phrased as follows:

Q: Some say that tax increases for payment of the new highways will be burdensome, others say it will not. Can you give us some idea what these increases will be in dollars and cents, preferably on some mileage basis?

A: The National Highway Users Conference prepared some estimates of the total annual tax increase, shown in the accompanying table, which we will use as a starter. For example, the table shows an increase of \$64.32 a year on a 2-axle, 6-tire truck of 19,000 lb, gvwt. This includes the proposed fuel, tire and new vehicle taxes but not the tax on "camelback," a rubber material used for recapping tires. Readers who recap tires will be able to get some approximate estimates on this tax from the data contained in the table's footnote.

While the table gives an excellent general idea of the taxes that truck operators will be required to pay as their share of the new highway financing program, it is too general for use by traffic managers and other transportation executives in their estimates of transportation cost increases. These executives require a breakdown on a cents-per-vehicle-mile or a cents-per-ton-mile basis. However, to arrive at such detailed figures certain operational data are required, and

Highway Bill Raises Many Questions

DA readers seek greater understanding of pending highway program, especially as to its effect on transportation costs

NHUC Estimate of Annual Truck Tax Increase

2—Axle, 6-Tire Van Truck (19,000 lb. gvwt)	
Fuel Tax (3,846 gal. @ 1¢ per gal.)	\$38.46
Tire Tax (6, 8.25 x 20, 2-yr life)	6.42
Tax on new vehicles (5-yr life)	19.44
ANNUAL TAX INCREASE	\$64.32
3—Axle, 10-Tire Tractor Semi-Trailer (40,000 lb. gvwt)	
Fuel Tax (8,000 gal. @ 1¢ per gal.)	\$80.00
Tire Tax (10, 10.00 x 20, 2-yr life)	16.10
Tax on new vehicles (5-yr life)	42.08
Vehicle weight Tax (\$1.50/1,000 lb. per yr)	60.00
ANNUAL TAX INCREASE	\$198.18
5—Axle, Diesel-Powered Tractor Semi-Trailer (64,000 lb. gvwt)	
Fuel Tax (17,021 gal. @ 1¢ per gal.)	\$170.21
Tire Tax (18, 10.00 x 20, 1-yr life)	64.53
Tax on new vehicles (5-yr life)	95.95
Vehicle weight Tax	96.00
ANNUAL TAX INCREASE	\$426.69

Recapping has not been included in arriving at the above estimates due, primarily, to the lack of information on operating practice. However, the proposed tax on "camelback" used to recap representative tire sizes would be:

7.10 x 15 Full cap, approx 10 lb., @ 3¢ per lb.	30¢ per tire
8.25 x 20 Too cap, approx 16.7 lb., @ 3¢ per lb.	50¢ per tire
10.00 x 20 Too cap, approx 25 lb., @ 3¢ per lb.	75¢ per tire

these will vary with each truck operator. The data are average vehicle load factors and average vehicle annual mileage. Where such detailed data are not available, annual fleet averages may be substituted, especially if the trucks are about of the same type and travel the same area, although the resultant cost data will be less accurate.

As an example of how the new taxes will affect truck operating costs, we will assume that the 2-axle truck in the table carries an average annual payload of 60 per cent of its capacity; an average of 11,400 lb. Next, we will assume that it travels about 20,000 miles a year.

(Please Turn to Page 110)



M. W. Young
General President

Officers Elected at AWA's 65th Annual Meeting

General Officers

President—M. W. Young, San Francisco, Calif.

Vice President—Ray M. King, Syracuse, N. Y.

Treasurer—W. A. Morse, Minneapolis, Minn.

Merchandise Div.

Pres.—C. J. LaMothe, St. Louis, Mo.

V.P.—F. D. Bateman, Chicago, Ill.

Treas.—R. C. Greeley, Cleveland, O.

Executive Committeemen—D. G. McNeely,

St. Paul, Minn.; T. H. Duke, Jacksonville,

Fla.; Ray Bradshaw, Philadelphia, Pa.

NARW

Pres.—Gilbert J. Stecker, Louisville, Ky.

V.P.—S. A. Kadane, Dallas, Tex.

Treas.—W. E. Ready, Indianapolis, Ind.

Executive Committeemen—C. B. Eddy,

Providence, R. I.; Alex Olson, Portland,

Ore.; A. R. Current, Chicago, Ill.; Philip

G. Kuehn, Milwaukee, Wis.

APPROXIMATELY 1,000 of the nation's public merchandise and refrigerated warehousemen were on hand April 10 when the American Warehousemen's Association opened its 65th Annual Meeting at the Statler Hotel, in Los Angeles, Calif.

The warehousemen, meeting in joint general sessions and in separate divisional sessions, named Secretary of Agriculture Ezra Taft Benson as the Man of the Year; elected new officers, and listened to a distinguished list of speakers and panel moderators discuss various phases of the industry.

Secretary Benson, scheduled to deliver the principal address, received the Man of the Year Award in absentia. A heavy cold prevented his appearance but the award was accepted in his behalf by Earl L. Butz, assistant Secretary of Agriculture. Mr. Butz also read the Secretary's prepared speech.

New Officers

Millard W. Young, of the National Ice and Cold Storage Co., San Francisco, Calif., was elected general president of the organization. He succeeds I. W. Culver, of Gibraltar Warehouses, also of San Francisco.

C. J. LaMothe, president of the St. Louis Terminal Warehouse Co., St. Louis, Mo., was elected president of the AWA Merchandise Division. New president of the National Association of Refrigerated

Young Named AWA

Warehouses is Gilbert J. Stecker, president of the Merchants Ice and Cold Storage Co., Louisville, Ky. (For complete list of officers, see box at the top of this page.)

The Secretary Speaks

The Benson address, as delivered by Mr. Butz, diagnosed America's agricultural ills as caused by rigid price support programs of the previous administration. As a cure he proposed better marketing and balanced production for farmers.

In expressing concern over the farmer's failure to share in this country's unprecedented peacetime prosperity, the Secretary said, "Farmers deserve a fair share of the national income. America's agriculture is common property, and belongs to all of the people."

Concerning a cure for farm problems, Mr. Benson said, "There is no patent medicine for agriculture. There is no magic price-support formula that will set everything right. And we will not be stampeded into ill-considered action."

Secretary Benson's address and the Man of the Year presentation were a part of the opening general session. The opening meeting

also included an address on the "Department of Defense Single Manager Supply System," presented by Vincent F. Caputo, staff director, Storage and Distribution Division, Office of the Assistant Secretary of Defense.

In addition, outgoing President Culver delivered his final report, Willard A. Morse delivered the treasurer's report, and William Dalton, AWA general secretary, spoke on "The Problem and the Challenge."

Opening divisional sessions on Tuesday afternoon feature reports of officers and committees.

Divisional Meetings

The Merchandise Division got down to business Wednesday morning with a report on the 1955 operating ratios by C. B. Taylor, Toronto certified public accountant. This was followed by an address entitled, "Standards of Responsibility for Warehousemen," by Arnold B. Peek, of the Security-First National Bank of Los Angeles.

A panel discussion called "Warehouse Construction and the Trend Toward Edge-of-Town Location," was moderated by D. G. McNeely, St. Paul, Minn.

On the same morning the

Secretary of Agriculture Ezra Taft Benson
named 1956 Man of the Year by the American
Warehousemen's Association as close to 1,000
members gather in Los Angeles at the group's
65th Annual Convention—C. J. LaMothe and
Gilbert J. Stecker named division presidents

General President

NARW conducted a panel discussion on "Legal Liability Insurance—Yes or No?" E. E. Hesse, of Chicago, Ill., served as moderator. W. C. Baker, chairman of the Cost Committee, spoke on "Do You Know Your Handling Costs?"

Baker's talk was followed by reports of the Refrigeration Research Foundation, presented by Harlan J. Nissen, president, and H. C. Diehl, director, of the Foundation.

Management Problems

The Thursday morning program was divided in half by the Merchandise Division. The first half was given to a panel discussion entitled "Office Mechanization—Does it Solve Your Problems or Create New Ones?" Morris M. Stern, chairman of the Office Procedures Committee, served as moderator.

This was followed by a series of management seminars covering operating ratios, employee relations, distribution tariffs, office procedures, storekeeper problems, the St. Lawrence Seaway, state laws, temperature and humidity control, and rates and charges.

F. Gilbert Lamb, president of the National Association of Frozen Food Packers, opened the

NARW session with an address on "Frozen Foods—Your Problem Too."

Later in the morning a presentation entitled "What Big Labor and Big Government Mean to You" was delivered by P. G. Kuehn, chairman of the NARW Industrial Relations Committee; J. P. Johnson, chairman of the Legislative Committee, and R. E. Keiser, manager of the Legislative-Industrial Relations Departments.

Greetings from Ike

President Eisenhower sent warm greetings to the more than 1,000 warehousemen assembled in Los Angeles. His telegram read, in part, "The members of your organization have an important role in America's dynamic marketing system. They prevent waste and through efficient storage operations help maintain an even flow of farm and factory goods to customers through their fine work as a vital link in the vast network of distribution. I am confident the warehousing industry will continue to help promote economic growth and a rising standard of living."

Closing Sessions

The final merchandise group meeting included a panel discussion on "Proving Our Case," moderated by Banfield Capron, of Chicago; an address on "Our Industry and the Federal Government," by F. D. Bateman, of Chicago; a report of the Resolutions Committee, and election of officers.

"Refrigerated Warehouse Construction and Modernization" was the title of a panel discussion led by Mr. Stecker at the final NARW meeting. This was followed by "Practical Tax Suggestions and Advantages," presented by Charles R. Lees, of Peat, Marwick, Mitchell & Co. The meeting closed with safety award presentations, report of the Resolutions Committee, and installation of officers.

The final general session included a report of the Resolutions Committee, presented by W. W. Wilson, Jr., general chairman, and the Nominating Committee report, presented by H. W. Verrall, general chairman. The reports were followed by the election and installation of officers.

In addition to the regular talks and panel discussions, the programs of both the Merchandise Division and the NARW were arranged to provide ample question and answer periods after each presentation, and separate discussion type meetings in which the floor was opened to comment on any and all phases of warehousing.

Social Program

The social program included the traditional First-Timer breakfasts, a welcoming reception, an A-Lo-Ha Night, the Annual President's Reception, and the Annual Dinner. Tours of Disneyland and a movie studio were special attractions.

As an additional feature this year, two special post-convention tours were arranged. A number of delegates journeyed to Hawaii, while others took the special train trip through the Feather River Canyon.

The General Convention Committee included Morgan Stanley, as chairman, and Jack L. Dawson, as co-chairman. •

25 Years of Progress Reviewed

Some 28,000 visitors journey to Atlantic City for the American Management

THE second largest packaging show in history came to a close April 12 in Atlantic City, N. J. A total of some 28,000 visitors was recorded for the Silver Anniversary edition of the American Management Association's National Packaging Exposition.

Registration at the three-day Packaging Conference, which was conducted simultaneously with the Exposition, exceeded 1000. Sixteen speakers and chairmen discussed the latest developments in packaging organization, methods, and application.

Both the Exposition and Conference were arranged to illustrate progress made by the packaging industry during the past 25

years. In addition, a number of the show exhibits and several of the Conference speakers presented previews of what might be expected in the next 25 years.

The Conference

The Conference opened with a talk by Richard Manville, of Richard Manville Research, who spoke on "Increasing Sales With Better Packaging Through Market Research." He presented four case histories of new packages, tracing each through four stages of development—the marketing problem calling for the new package, strategies and designs considered, testing, and the final marketing effort.

T. E. Mechem, supervisor of

plant engineering for Douglas Aircraft Co., spoke on "In-Plant Parts Handling." He told how a multi-plant manufacturing operation offers dramatic examples of how good industrial packaging can contribute to more efficient production.

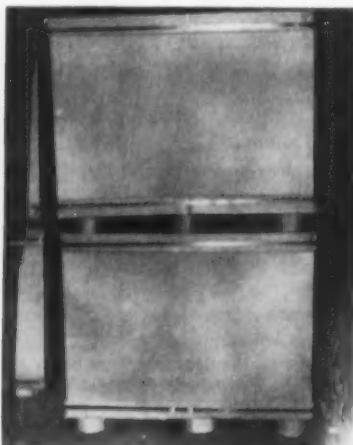
"The Synthesis of an Adhesion Policy" was presented by Dr. Frank C. Campins, president of Polymer Industries, Inc. He explained that a good adhesion policy demands understanding and interrelation of the properties of the surface, the adhesive, and the applying phase of the packaging equipment.

Melvin C. Koester, packaging and materials handling engineer for Libbey-Owens-Ford Glass Co.,

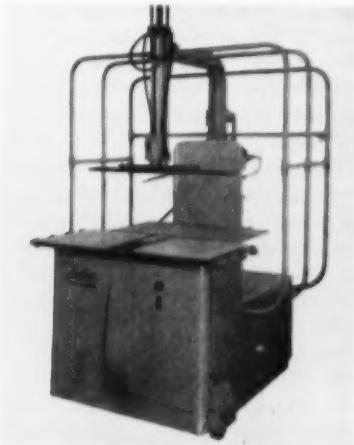
Permacel Tape Corp. adjustable cutter for use with heavy-duty strapping tape



Gaylord Container Corp.'s Drum-Pak heavy-duty container for shipping use



Ludlow Mfg. & Sales Co. machine for tying bundles of knocked-down boxes



at Packaging Show

Association's Silver Anniversary Exposition

spoke on "Packaging and Packing Panoramic Windshields." He was followed on the program by Donald Macaulay, president of Paper & Printing Control, Inc., who delivered a paper on "How You Can Accurately Measure Your Printing Quality."

"The Organization of a Packaging Committee" was treated by a three-man team, including William T. Eagan, director of packaging, Colgate-Palmolive Co.; Clayton Henrichs, production methods engineer, Ayerst Laboratories, Inc., and F. H. Wiley, general supervisor of materials handling research, International Harvester Co.

The final session was entitled "Packaging Engine Parts for

Original Equipment Manufacturers," and was presented by John A. Newton, factory manager, and B. A. Cummings, manager of production control, both of the Valve Div., Thompson Products, Inc.

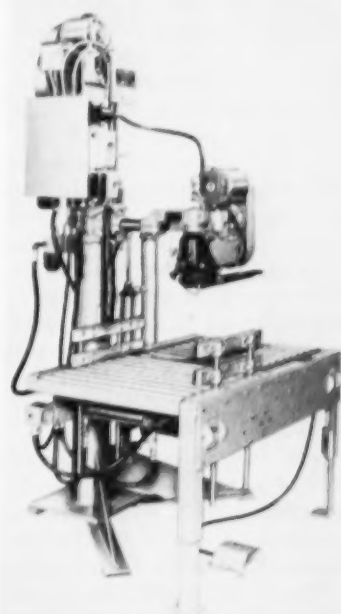
The Exposition

The 387 exhibitors at the Exposition presented one of the most comprehensive displays of packaging materials, supplies, tools, equipment, and machinery ever assembled under one roof.

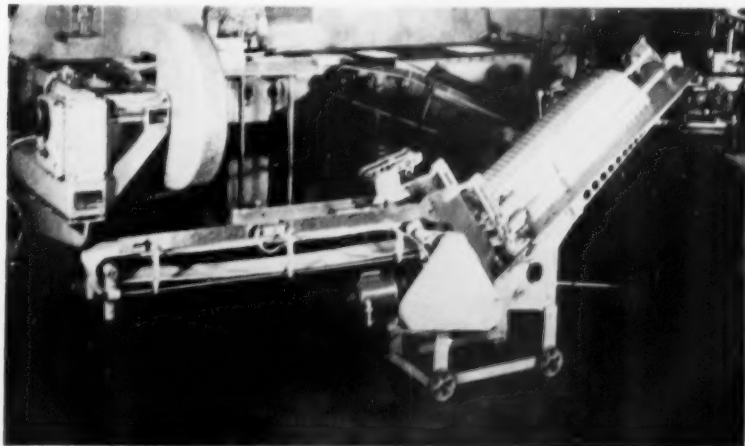
A new triple-wall corrugated fibreboard with three rows of fluting and four liners was shown by Corro Ltd., under the name of Tri Wall Pak. It is suggested as a substitute for wooden and cleated
(Please Turn to Page 130)



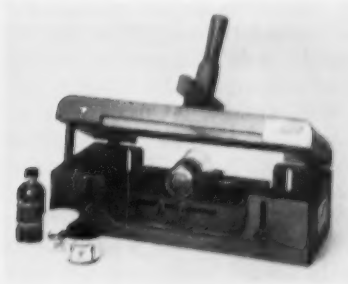
Bakelite Co. cube-type container made of polyethylene for foods, chemicals



Stokes & Smith Co. portable, self-powered automatic stacker for use with both wrapping machines and quad stayers, automatically synchronizes its speed



Bostitch Boxlok, semi-automatic air and electrically operated stapling unit



Material Handling Institute's Exposition of 1956

SOME 160 exhibitors will be showing materials handling equipment, valued at about \$4.5 million, to an estimated 20,000 visitors expected to attend The Material Handling Institute's Exposition of 1956, which will be held in the Cleveland Public Auditorium, Cleveland, Ohio, June 5 to 8.

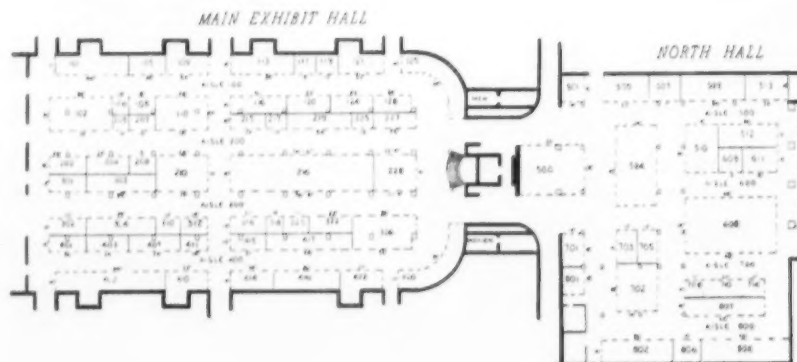
It is claimed that more new equipment will be presented at the exposition than has ever been unveiled in a single materials handling show. A recent survey of exhibitors indicates that 1,196 new developments and new pieces of equipment will be shown for the first time. The cost of the booth displays is reported to be in excess of \$1 million.

The exposition will be devoted exclusively to materials handling equipment, with major emphasis on equipment used in the plant, the warehouse, and the plant yard.

The list of equipment being exhibited covers more than 34 basic types in the entire line of mechanical handling equipment, ranging from auxiliary and special handling types through conveyors, lift trucks, hoists, monorails, etc.

Admission to the exposition is by registration only. The show will not be open to the general public. There is no registration fee, however, advance registration will save visitors much time and inconvenience. Tickets for the exposition can be obtained by writing DISTRIBUTION AGE Show Division, 56th and Chestnut Sts., Philadelphia 39, Pa.

It is claimed that more new equipment will be presented than has ever been unveiled at a single materials handling show. The exhibits, combined with AMHS technical sessions, are expected to attract more than 20,000 visitors

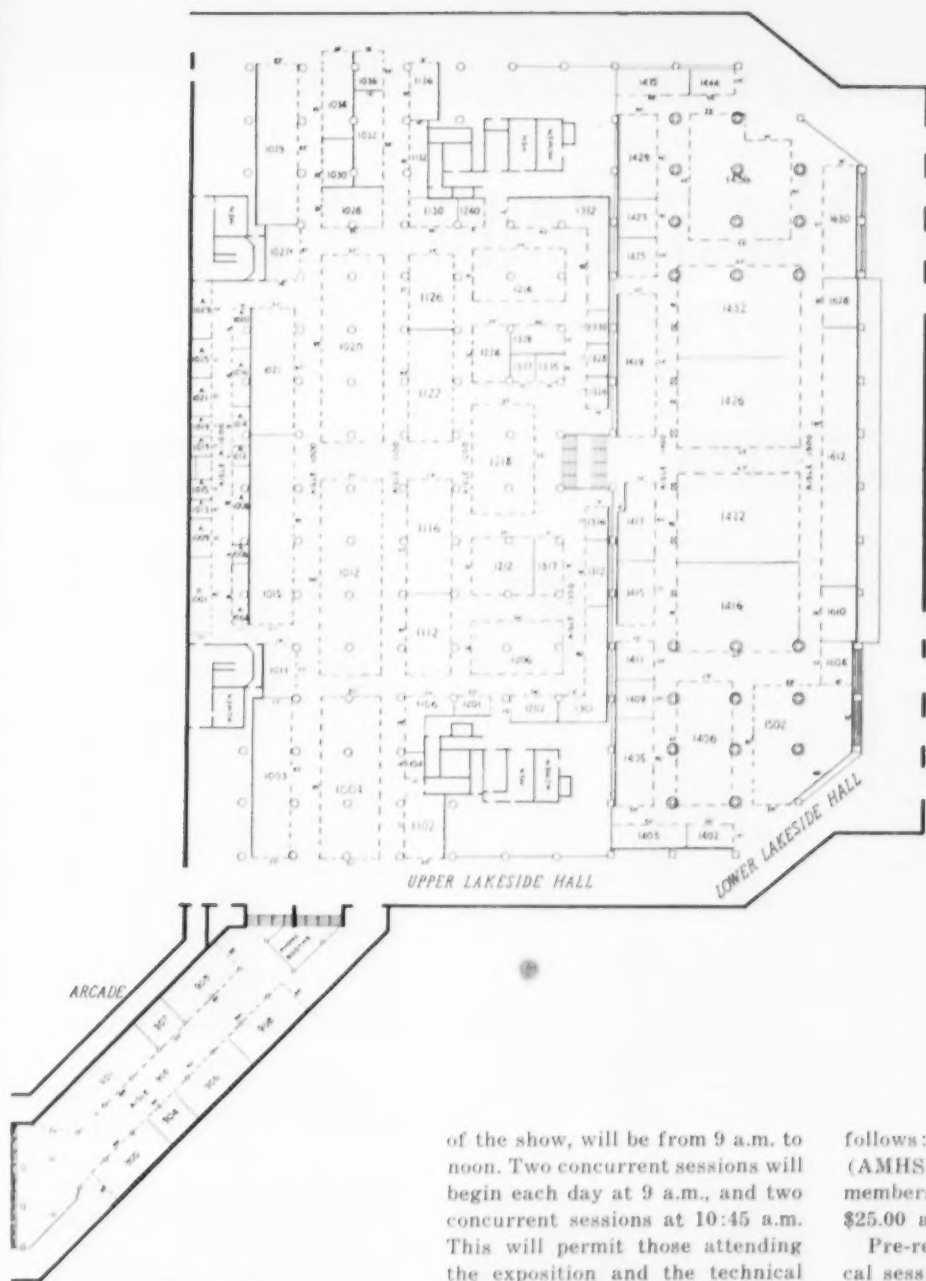


The exhibits will be open on June 5 and 6 from 10 a.m. to 5:30 p.m.; on June 7 from 12 noon to 10 p.m.; and on June 8 from 10 a.m. to 5 p.m.

Shown is the floor plan of the Cleveland Public Auditorium, giving

the location of each exhibitor's booth.

The American Material Handling Society is conducting the technical sessions, the theme of which will be "Integrated Handling—Management Profit Tool."



Floor Plan

(See list of exhibitors and booth numbers on Page 51)

A group of 12 management experts, representing many of the leading industries in the country, will be speakers at these meetings, which will be held in conjunction with the exposition. The sessions, scheduled for the first three days

of the show, will be from 9 a.m. to noon. Two concurrent sessions will begin each day at 9 a.m., and two concurrent sessions at 10:45 a.m. This will permit those attending the exposition and the technical sessions maximum flexibility in selecting sessions to suit their interests and allow ample time to visit the exhibits.

The following aspects of materials handling will be the subjects of the seminars:

- Work Measurement
- Costs Analysis
- Automation
- Work Simplification
- Plant Layout
- Traffic Management
- Distribution and Storage

Technical Sessions fees are as

follows: 1 day (2 sessions) \$10.00 (AMHS members); \$12.00 (non-members). 3 days (6 sessions) \$25.00 and \$30.00, respectively.

Pre-registration for the technical sessions can be made through the American Material Handling Society Technical Sessions General Committee, Box 6662, Cleveland, Ohio.

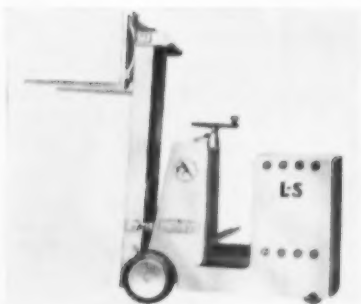
For your convenience a list of exhibitors and booth numbers, as well as photographs and descriptive material of standard or newest products is shown on the following pages. Additional information on each exhibitor may be secured by circling the key number on the Reader Service Card on Page 53 of this issue.

(Please Turn Page)

Materials Handling Equipment

Pre-Show Round-Up

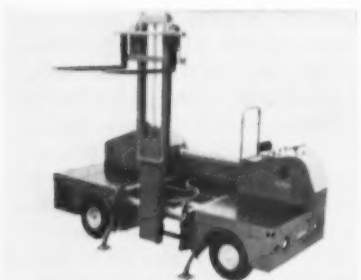
Fork Trucks



Lewis-Shepard Products, Inc.

A new, improved version of the Model E electric fork truck line will be highlighted at the Exposition. The trucks, ranging in capacity from 1,000 through 4,000 lb, feature new elevation assemblies, hydraulic systems, steering mechanisms and controls, and brake and drive axle improvements.

Circle 50 on Service Card, Page 53



Baker-Raulang Co.

Models of the side-loading fork-lift truck will be a feature of this company's exhibit. Shown for the first time will be the 2,000-, and 7,000-lb models in the type FG line of internal-combustion engine fork-lift trucks. Trucks equipped for LP-Gas, battery-powered units, and a complete attachment line also will be presented.

Circle 51 on Service Card, Page 53



*Kwik-Mix Co. (sub. of)
Koehring Co.*

An improved Model S-10 Moto-Bug will be presented by the Kwik-Mix Co., while the Koehring Co. will devote maximum attention to the new Model 205 Cruiser crane.

Circle 52 on Service Card, Page 53

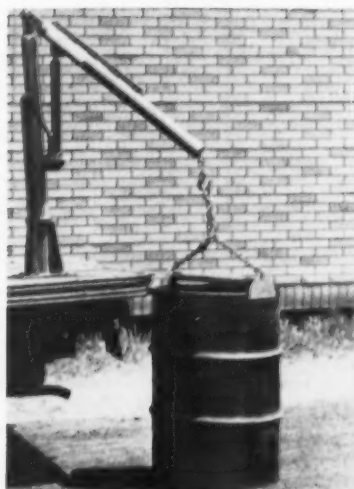


Gerlinger Carrier Co.

The H-40, one of five models to be displayed, has a lifting capacity of 40,000 lb. Twenty tons can be lifted to a height of 17 ft 3 in at a speed of 55 ft a min. The model has a turning radius of 48 in., a tail swing of 240 in., and 48-in. standard forks.

Circle 53 on Service Card, Page 53

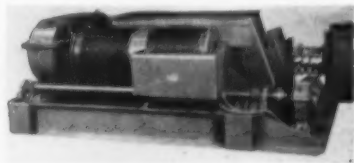
Cranes & Hoists



Ruger Equipment Inc.

A quarter-ton-capacity, hand-operated, truck-mounted hydraulic crane, Model TM-1/4, weighing only 100 lb, can be mounted easily on any truck, tractor, wagon, dock, or floor. The crane rotates a full circle at its well and can be locked at any of 12 positions.

Circle 54 on Service Card, Page 53



Robbins & Myers, Inc.

The new type C-10 trolley hoist, for double I-beam crane mounting, is designed for floor or cab control and is powered by a 25-hp, totally enclosed, slip ring, 30-min duty motor. Controls of the hoist are full magnetic type.

Circle 55 on Service Card, Page 53

A show-in-print preview of tools, supplies, and machinery to be displayed, covering more than 34 basic types of mechanical handling equipment, their accessories and attachments



*Chisholm-Moore Hoist Div.
Columbus McKinnon Chain Corp.*

Features of the new Lodestar electric chain hoist include push-button control, hook or trolley suspension, and reduced maintenance. For use on single or three-phase currents, the hoist is available in capacities of from one-eighth ton to one ton

Circle 56 on Service Card, Page 53

Conveyors



Harry J. Ferguson Co.

Congestion and slow-downs are eliminated, it is reported, and uniform rate of package flow maintained on curved conveyor lines by means of 90-, and 180-deg. chain-driven, power-roller conveyor curves being offered by this firm. The units can be driven from a 1/2-hp motor or conveyor head shaft

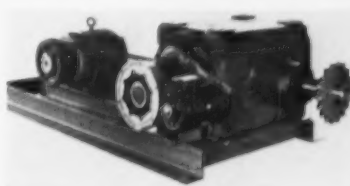
Circle 57 on Service Card, Page 53



The Belt Corp.

These industrial conveyors are designed on the "building block" principle. Where strength, size and function permit, the same parts are used on various types and sizes of equipment. A wide choice of conveyors and accessories is available

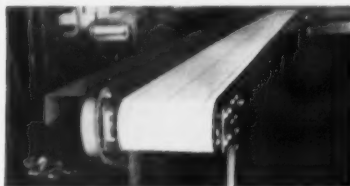
Circle 58 on Service Card, Page 53



Mechanical Handling Systems, Inc.

A push-and-carry system, consisting of light-weight overhead trolley conveyors, carriers, etc., will be in operation at the Show. An IVC drive unit set up for load demonstration, and an MHS Overlimitor to demonstrate overload protection, also will be exhibited

Circle 59 on Service Card, Page 53

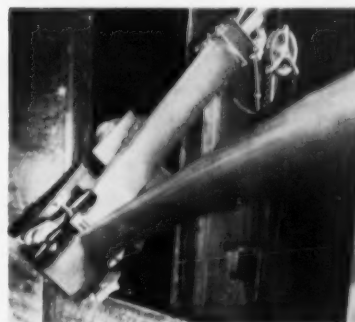


Island Equipment Corp.

Equipment which will be on display at the Show includes: narrow belt conveyors, double-flex chain convey-

ors, live roller conveyors, slide bed belt conveyors, and standard and head roller drive unitized conveyor tables

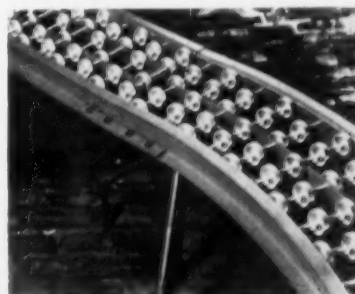
Circle 60 on Service Card, Page 53



Stephens-Adams Mfg. Co.

Centrifugal action of material against the high-speed belt causes grain, sand, coal, crushed stone, fertilizer, and similar bulk materials to be thrown to the ends of rail cars

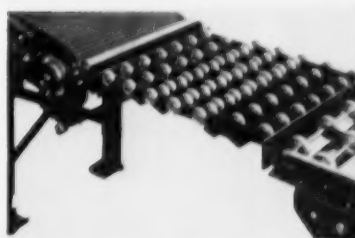
Circle 61 on Service Card, Page 53



Sage Equipment Co.

This heavy-duty, industrial gravity wheel conveyor is available in 5-ft., 10-in. straight sections and 45-, and 90-deg curves, as well as in 12-, 14-, 18-, and 24-in. widths

Circle 62 on Service Card, Page 53



The Rapids-Standard Co., Inc.

A new telescoping bridge to be used between adjacent power and gravity conveyors that are lagged to the floor, has been introduced by the company. Packages as small as 6 in. square can be conveyed on the bridge, which is available in various widths

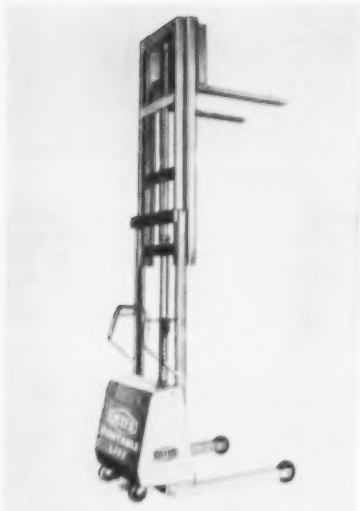
Circle 63 on Service Card, Page 53

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Pre-Show Round-Up . . .

(Continued from Preceding Page)

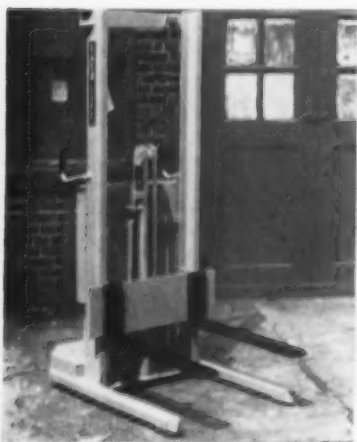
Trucks, pallet



The Oster Mfg. Co.

A new 112-in. telescoping portable lift, Model L1112-P, has a 1,000-lb capacity and a battery-powered hydraulic lift. The lift can be used as a platform truck, a straddle fork truck, a portable elevator, or a shop crane.

Circle 64 on Service Card, Page 53



Liftequip Co.

A portable stacker with powered lift only will be displayed at the MHI Exposition. In addition, a powered drive walkie type unit also will be presented.

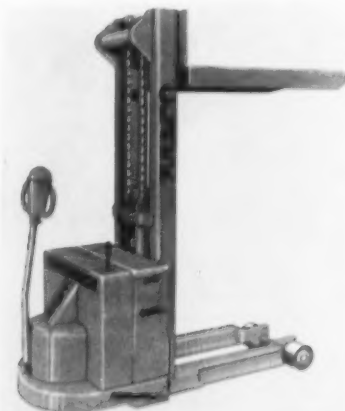
Circle 65 on Service Card, Page 53



Lift Trucks, Inc.

Many models of the Hydroelectric line of lift trucks will be featured at the Show, including the hand motorized lift truck. A ride-type tractor, and a low-lift, hand-motorized pallet truck also will be exhibited.

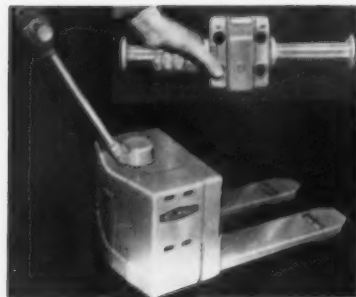
Circle 66 on Service Card, Page 53



*Industrial Truck Div.,
Clark Equipment Co.*

A lifting height of 51½ through 70½ in., a down height of 6½ or 10½ in., and quick accessibility for maintenance, are features of a new 4,000-lb-capacity, battery-powered hand truck, available in two models. Full load lifting speed is 9 ft a min. and lowering speed is 20 ft a min. Lowering speed is hydraulically adjusted to weight carried.

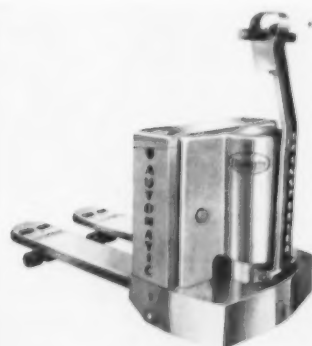
Circle 67 on Service Card, Page 53



The Raymond Corp.

A new walkie electric truck will be shown publicly for the first time at the Exposition. Design of the new truck features compactness. The initial model, having four automotive type batteries, is designed for pallet handling, has 4,000-lb capacity.

Circle 68 on Service Card, Page 53



Automatic Transportation Co.

A complete new line of operator-led, electric-driven industrial trucks includes models of this new pallet truck, with capacities ranging from 4,000 to 6,000 lb. Also featured in the line are high-, and low-lift platform trucks; high-lift, suspended-load type stackers and tractors.

Circle 69 on Service Card, Page 53



Revolator Co.

The low-lift pallet type shown as a conversion to power from the hand-drawn, hand-pump pallet lift truck. Pull handle and hand pump have been replaced with electric powered traction unit and pump with provision for battery compartment.

Circle 70 on Service Card, Page 53



Barrett-Cravens Co.

The load is lifted by pressing a foot pedal instead of the conventional handle stroke on this new Model HX, foot hydraulic lift truck. Designed for easier handling of pallet loads, the trucks are available in 2,000-, 4,000-, and 6,000-lb capacities

Circle 71 on Service Card, Page 53

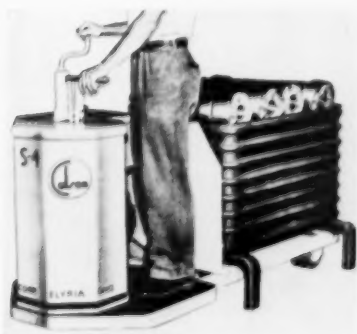
Trucks, platform



The Elwell-Parker Electric Co.

A sit-down type, electric-powered, low-lift platform truck, which permits the driver to sit rather than stand during handling operations, recently has been developed. The new model is available in capacities from 10,000 to 20,000 lb

Circle 72 on Service Card, Page 53



Colson Corp.

A double, fixed displacement, gear-type hydraulic pump and a single, fixed displacement, gear-type fluid motor are used to provide two speeds forward and two in reverse for this all-hydraulic pallet handling truck

Circle 73 on Service Card, Page 53

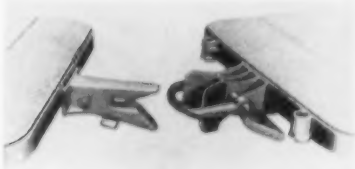
Trailers



Magnesium Co. of America

Standard sizes of this aluminum truck, Series M101, consists of widths from 24 in. up to 48 in. in 6-in. increments, and lengths from 30 in. to 72 in. in 6-in. increments. All-aluminum construction cuts weight as much as 80 per cent. Timken bearings eliminate binding, assure easy swiveling

Circle 74 on Service Card, Page 53



Nutting Truck and Caster Co.

Formerly constructed so that the engaging hook of the jaw section was held in place by a counterweight, the improved automatic trailer coupler design employs a compression spring, which makes disengagement impossible during transit

Circle 75 on Service Card, Page 53

Tractors

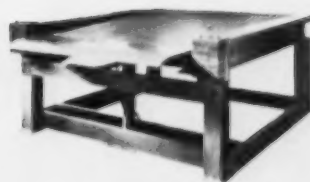


Mercury Mfg. Co.

Full spring suspension, and design for rear seated operation are the main features of the new electric tractor, Model A-751. Two gas model tractors also will be shown, along with a complete line of fork trucks in capacities from 2,000 to 8,000 lb

Circle 76 on Service Card, Page 53

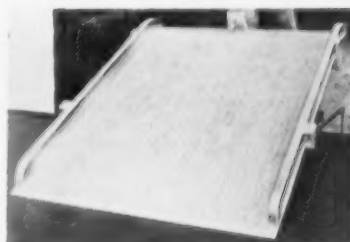
Dockboards



Rowe Methods, Inc.

Two new packaged unit hydraulic dock leveling devices have been introduced by the firm. The models are available with capacities of 10,000 and 20,000 lb, and are delivered completely assembled ready for placement in front of an existing dock and subsequent wiring

Circle 77 on Service Card, Page 53



Magline, Inc.

Many features will be included in the Magliner dockboard line to be presented at the Exposition. New, reinforced curb ends on the dockboards permit easier, sharp-angle turns in limited turning areas. Platform trucks, pallet dollies, and conveyors also will be shown

Circle 78 on Service Card, Page 53

Containers



Spaulding Fibre Co., Inc.

The light-weight boxes of vulcanized fibre, are arranged to stack, and also nest when empty. A full line of receptacles, available as boxes, barrels, baskets, cans and trucks in a wide range of sizes, also will be shown

Circle 79 on Service Card, Page 53

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Pre-Show Round-Up . . .

(Continued from Preceding Page)

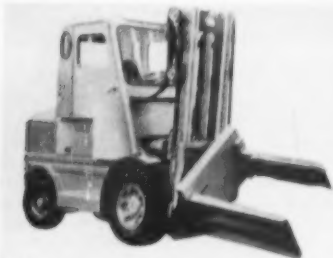
Fork Truck Attachments



Toumotor Corp.

The hydraulically-operated carton clamp easily and safely handles multi-unit loads of cartons, cases, packages, crates, etc., and assures maximum utilization of storage space. Pivot mounting facilitates pickup of the multi-unit loads

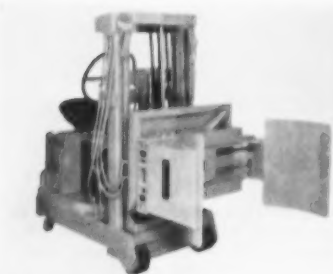
Circle 80 on Service Card, Page 53



The Yale & Towne Mfg. Co.

A new rotating drum-handling attachment of 2,000-lb capacity, which can serve a number of drum-handling assignments, and is particularly effective where quick horizontal placement or stacking is required, has been announced. Clamp arms are rubber coated

Circle 81 on Service Card, Page 53



Market Forge Co.

A roll clamp and rotator fork truck,

along with a pallet-lift truck, a tier-lift truck, skate-wheel conveyors, gas-electric power units, a load unit rack system, plus accessories, are among the features of this firm's materials handling line

Circle 82 on Service Card, Page 53

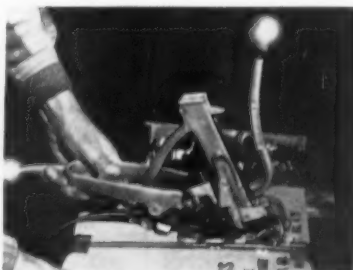
Strapping



Acme Steel Co.

This push button-operated Model F-1 strapping machine, on a special conveyor setup with a continuous flow of packages demonstrates high speed, large volume, production line strapping. The machine, electrically powered and controlled, operates equally well with various types of conveyors

Circle 83 on Service Card, Page 53

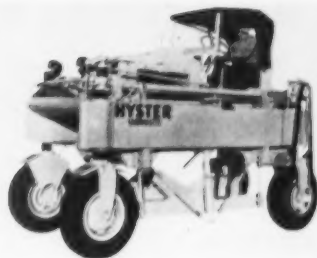


The Stanley Works

On-the-spot demonstrations of strapping equipment, adaptable to any packing and shipping requirement, will feature this firm's display at the MHI Exposition. The strapping machines easily can be cut into new or existing conveyor lines at the correct working height

Circle 84 on Service Card, Page 53

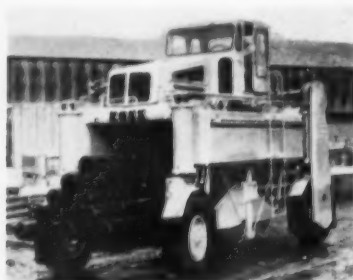
Trucks, special



Hyster Co.

The straddle truck will be one of several models of the industrial truck line to be shown by this company. Six new models, not complete at present, also will be displayed at the Exposition

Circle 85 on Service Card, Page 53



*Ross Carrier Div.
Clark Equipment Co.*

A new five-speed synchromesh transmission, 15 per cent more horsepower at the wheels, hydraulic control of load hooks, and four-wheel radi-arc steering, are features of the new 30,000-lb-capacity straddle carrier, Series 93

Circle 86 on Service Card, Page 53



G. H. Tennant Co.

The industrial floor machine is designed for removing heavy, traffic-packed dirt from factory aisles in one operation. The automatic unit has a capacity of 5,000 sq ft an hour, and does not require the use of chemicals or detergents

Circle 87 on Service Card, Page 53



Whiting Corp.

The trackmobile is capable of developing a draw-bar pull as much as 12,800 lb. This performance of the 9,000-lb unit is made possible by a constant pressure hydraulic jack which lifts the car slightly and transfers some of its weight to the unit.

Circle 88 on Service Card, Page 53

Racks



Arco Corp.

The new drum storage rack permits more storage within a given area as all air rights are used, and, at the same time, accessibility to each drum is direct. The rack will handle different size barrels and drums, as the spreaders give full support from front to rear.

Circle 89 on Service Card, Page 53

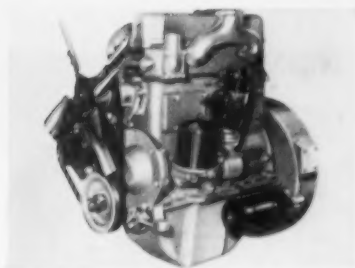


Alcey-Ferguson Co.

First-in, first-out live storage of boxed or palletized loads, tote pans, etc., can be obtained with this new live storage rack. A-F live rails have two rows of wheels, and each rail serves two lanes. Length, width and height can be varied.

Circle 90 on Service Card, Page 53

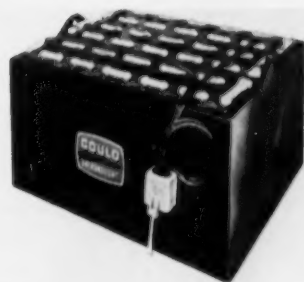
Parts & Accessories



Hercules Motors Corp.

Models of a new series of gasoline overhead-valve and direct-injection diesel engines will feature this firm's exhibit. The engines are built in matching and interchangeable four and six cylinder designs. Horsepower range is from 3 to 500.

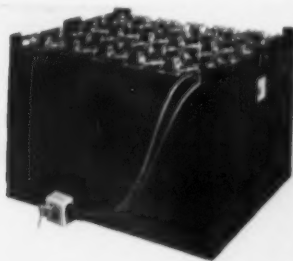
Circle 91 on Service Card, Page 53



Gould-National Batteries, Inc.

The new Super Dreadnaught type battery will be among the latest models exhibited. Assembled trays of batteries in different capacities, as well as cut-away samples of individual cells to show the different types of battery construction, will be shown.

Circle 94 on Service Card, Page 53

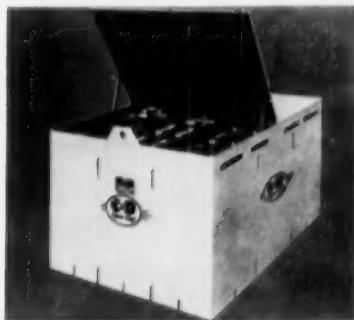


Storage Battery Die.

Thomas A. Edison, Inc.

The MC batteries were specifically designed to give more power for driver-ride, sit-down fork trucks, and are claimed to provide 25 per cent more capacity than ever before available in nickel-iron-alkaline batteries, when used in that particular type of service.

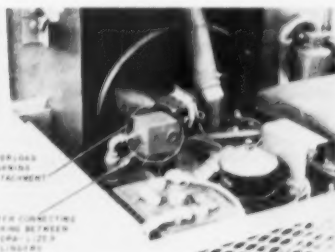
Circle 92 on Service Card, Page 53



C&D Batteries, Inc.

Capacity has been increased at least 10 per cent in two new industrial truck batteries, known as Type HA and Type HB. Longer plates and less sediment space account for the increased capacity in same size case.

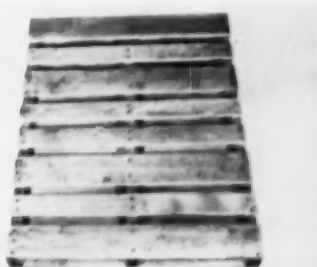
Circle 95 on Service Card, Page 53



Lamson Mobilift Corp.

This firm will introduce its new 2,000-lb, sit-down industrial truck, Model B-224, and its latest safety attachment, an overload warning signal, at the Show. The purpose of the new attachment is to warn, by signal light or bell, that the load is in excess of the safe operating capacity of the truck.

Circle 93 on Service Card, Page 53



Acme Pallet Co., Inc.

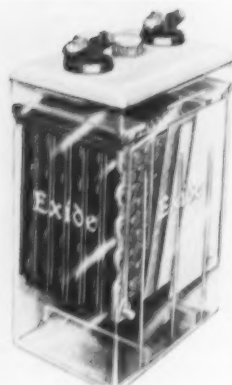
Added runner strength, as well as 46 per cent more holding power to resist pulling out, is obtained by using overlapping drive screw nails on these specially selected hardwood pallets.

Circle 96 on Service Card, Page 53

(Please Turn Page)

Pre-Show Round-Up . . .

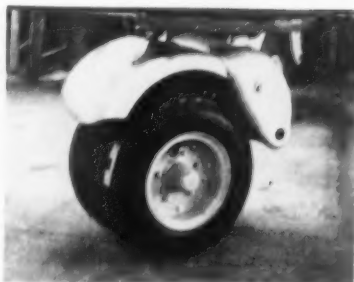
(Continued from Preceding Page)



Exide Industrial Div.
The Electric Storage Battery Co.

A new line of batteries which feature longer life and higher instantaneous discharge rates, includes the new polystyrene dowels which maintain correct spacing between plates yet permit easy access of the electrolyte. The batteries are designed for stationary power applications

Circle 97 on Service Card, Page 53



Modern Caster Co.

Four 8-in., shock-preventing, Duoflex casters with new type plastic wheel is claimed to permit one man handling 10,000 lb gross operating load over relatively smooth in-plant operating surfaces

Circle 99 on Service Card, Page 53



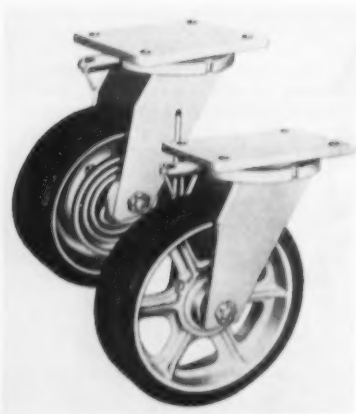
The Fairbanks Co.

Casters, made of welded construction, eliminates the king-pin in the swivel caster. A new appliance elevating truck, two-wheel and platform hand trucks, wheels for casters and trucks, bronze and iron body valves, and dart unions also will be exhibited

Circle 101 on Service Card, Page 53

Special Equipment

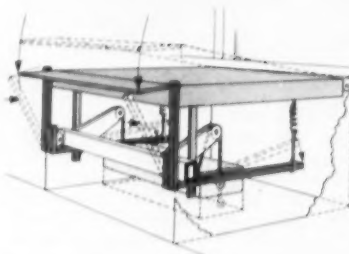
Wheels & Casters



Bassick Co.

A new line of 8-, 10-, and 12-in. casters is presented by the company. Sprung-wheel construction provides the shock-absorbing features needed to handle fragile or valuable loads on rough terrain. Features also include sealed swivel and wheel bearing assembly, and four-position swivel locks

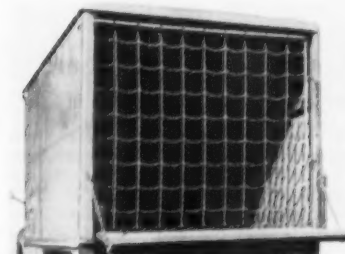
Circle 98 on Service Card, Page 53



Kelley Co., Inc.

Dual operating arms and an improved cross traffic lock and tilt adjuster, are features of a new series of HI-LO automatic dockboards. Truck actuated operating arms automatically adjust the dockboard to meet carrier bed levels. No power or control required

Circle 100 on Service Card, Page 53



Bolt and Chain Div.
Republic Steel Corp.

A new, improved truck chain gate that permits full loading and prevents loss of end loads on trucks or trailers, is announced. A hasp type fastener on the chain gate assures secure locking and discourages theft. This product is custom-made to individual specifications

Circle 102 on Service Card, Page 53

We'll See You in Cleveland

Chilton Co., located in Booth No. 219, and represented by Distribution Age, Automotive Industries, and The Iron Age, anticipates the pleasure of talking to you at the Show.

Exhibitors' List

Exhibitor	Booth No.	Exhibitor	Booth No.	Exhibitor	Booth No.
A		O			
Acme Pallet Co., Inc.	710	Exide Industrial Div., The Electric Storage Battery Co.	414	Ohio Galvanizing & Mfg. Co.	217
Acme Steel Co.	1610	F		Ohio Hoist & Mfg. Co., Inc.	312
Albion Industries, Inc.	1339	Fab-Weld Corp.	1136	Ohio Honing & Hydraulic Co., The	A-1012
Algene Marking Equipment Co.	227	Fairbanks Co., The	116	Orangeville Mfg. Co., Inc.	A-1021
Allen Industrial Products, Inc.	1337	Faultless Caster Corp.	509	Oster Mfg. Co., The	1608
Allied Mfg. & Sales Co.	1402	Ferguson Co., Harry J.	1020	P	
Allis-Chalmers, Buda Div.	1612	Field Engineering Products Co.	105	Parker Appliance Co., The	1103
Alvey-Ferguson Co., The	1132	G		Pittsburgh Steel Products	500
American Chain & Cable Co., Inc.	A-1001	Gar Wood Industries, Inc.	906	Powell Pressed Steel Co., The	504
American Monorail Co.	1419	General Box Co.	215	Power-Line Sales, Inc.	714
American Pulley Co.	1627	General Electric Co.	205 & 1032	R	
Anchor Coupling Co., Inc.	207	Gerlinger Carrier Co.	1106	Rack Engineering Co.	808
Anchor Steel & Conveyor Co.	A-1008	Globe Hoist Co.	1106	Radio Corp. of America	128
Arco Corp.	A-1014	Gould-National Batteries, Inc.	1425	Rapids-Standard Co., Inc., The	802
Austin-Western Works	1405	Grand Specialties Co.	1402	Raymond Corp., The	1122 & 1220
Automatic Transportation Co.	1234-1332	Greer Co., J. W.	318	Ready-Power Co., The	1409
Automotive Industries	219	H		Republic Steel Corp.	900
B		Harnischfeger Corp.	1502	Revolator Co.	303
Baker-Baulang Co., The	908-1432	Hapman Conveyors, Inc.	A-1006	Richards-Wilcox Mfg. Co.	403
Baldwin-Lima-Hamilton Corp.	1405	Hercules Motors Corp.	510	Robbins & Myers, Inc.	1417
Ballymore Co.	501	Hertner Electric Co.	128	Round & Son, Inc., David	403
Barrett-Cravens Co.	A-1009	Hughes-Keenan Corp.	121	Rowe Methods, Inc.	301
Basick Co., The	505	Hyster Co.	1116 & 1422	Ruger Equipment, Inc.	108
Belt Corp., The	A-1002	I		S	
Benton Harbor Engineering Works, Inc.	A-1017	Ingersoll Kalamazoo Div., Borg-Warner Corp.	1312	Sage Equipment Co., Inc.	1240
Berg-Gibson Mfg. Co.	1030	The Iron Age	219	Saginaw Products Corp.	A-1025
Better Packages, Inc.	310	Ironbound Box & Lumber Co.	497	Service Recorder Co., The	225
Bond Foundry & Machine Co.	124	Island Equipment Corp.	1403	Service Supply Corp.	1036
Brainard Steel Div., Sharon Steel Corp.	A-1029	K		Shepard Niles Crane & Hoist Corp.	102
Broderick & Bascom Rope Co.	703	Kalamazoo Div., The New York Air Brake Co.	1126	Silent Hoist & Crane Co.	326
Bushman Co., The E. W.	113	Kalamazoo Mfg. Co.	1034	Spaulding Fibre Co., Inc.	1320
C		K. W. Battery Co., Inc.	A-1015	Stacklin Corp.	202
C & D Batteries, Inc.	1444	Kelley Co., Inc.	512	Stanley Works, The	1011
C. I. T. Corp.	507	Knickerbocker Co., The	904	Stephens-Adamsen Mfg. Co.	316
Cascade Mfg. Co.	1326	Koehring-Kwik-Mix Co.	1429	Sterling Bolt Co.	701
Chain Belt Co.	410	L		T	
Chainveyor Corp.	322	Lamson Mobilift Corp.	1028	Tennant Co., G. R.	706
Chester Hoist Div., National Screw & Mfg. Co.	A-1016	Landahl Conveyor Co.	1419	Thomas Truck & Caster Co.	907
Chicago Tramrail Corp.	1411	Lewis, G. B.	422	Tote System, Inc.	1230
Chilton Company	219	Lewis-Shepard Products, Inc.	228 & 1012	Towmotor Corp.	1112, 1206, & 1301
Chisholm-Moore Hoist Div.	302	Liftquip Co.	401	U	
Clark Equipment Co., Construction Machinery Div.	1436	Lift Trucks, Inc.	702	Union Metal Mfg. Co., The	608
Clark Equipment Co., Industrial Truck Div.	1416-1426	Loudon Machinery Co., The	1015	Union Steel Products Co.	1317
Clark Equipment Co., Ross Carrier Div.	1416-1426	Loomis Machine Co.	806	Unistrut Products Co.	304
Cleveland Tramrail Div., The Cleveland Crane & Engineering Co.	716	M		V	
Coffing Hoist Div.	109	Magline, Inc.	181	Vickers, Inc.	1415
Coles Cranes, Inc.	1630	Magnesium Co. of America	1218 & 1335	W	
Colson Equipment & Supply Co.	128	Mannover Industries, Inc.	411	Waukesha Motor Co.	801
Colson Corp., The	1021	Market Forge Co.	A-1019	Webb Co., Jervis B.	110
Crescent Metal Products, Inc.	117	May-Fran Engineering, Inc.	807	Weber Marking Systems	700
D		Mechanical Handling Systems, Inc.	1015	West Bend Equipment Corp.	210
Dempster Bros., Inc.	909	Mercury Mfg. Co., The	1903	Whiting Corp.	1029
Dexion Div., Acme Steel Co.	1628	Modern Caster Co.	204	Wire Rope Sling Dept., American Chain & Cable Co., Inc.	A-1001
Distribution Age	219	Morse Chain Co.	1201	Wright Hoist Div., American Chain & Cable Co., Inc.	A-1001
Doerr Electric Corp.	1435	Motor Generator Corp.	1130	Y	
Duff-Norton Co.	109	Moto-True Co., The	416 & 417	Yale & Towne Mfg. Co., The	1004 & 1212
E		Moyno Pump Div., Robbins & Myers, Inc.	1417	Z	
Edison, Inc., Thomas A., Edison Storage Battery Div.	901	N			
Electric Products Co., The	1427	Nutting Truck & Caster Co.	513		
Elwell-Parker Electric Co.	1020	O			
Equipment Mfg., Inc.	1013				
Euclid Crane & Hoist Co., The	208				

**FREE**

LITERATURE

Warehouse Directory

Affiliated Warehouse Cos. has published a new directory of its member warehouses. All warehouses are listed geographically, and the listings give services and facilities of each warehouse.

Circle 106 on Service Card, Page 53

Powered Conveyors

John Bean Div., Food Machinery & Chemical Corp., has issued a new catalog on Cutler powered conveyors. The booklet gives details and specifications on roller and live-roller conveyors, with transfer units, guard rails, drives, dips, etc.

Circle 107 on Service Card, Page 53

Loading Dock Bumpers

Durable Mat Co. has announced availability of a four-page brochure describing its line of loading dock bumpers. The rubber mats are for use on industrial docks, truck terminal docks, warehouse docks, railroad docks, and other shipping and receiving platforms.

Circle 108 on Service Card, Page 53

Tail-Gate Loader

Models H-20 and H-30 Load-N-Gate power-lift hydraulic tailgates are described in a new two-page catalog, announced by Hercules Steel Products Co. The new catalog covers both 2,000 and 3,000-lb capacity power take-off driven models. Construction, operation and controls are described and illustrated. Condensed specifications also are shown.

Circle 109 on Service Card, Page 53

Cost Record Book

Truck operators in every business can obtain copies of the revised "Cost Record Book" issued by The White Motor Co. The book provides a comprehensive yet simple system of analyzing truck operating costs, and can be tailored to any truck-using business and any size fleet. It is adaptable to either delivery service, highway operation or off-the-road fleet.

Circle 110 on Service Card, Page 53

Federal-Aid Highways

A new booklet, "Federal-aid for Highways," has been published by the National Highway Users Conference. The illustrated 24-page booklet explains what Federal-aid to highways is, and how it works. It includes a description of the various Federal-aid highways systems, explains how Federal-aid money gets to the states, outlines the required matching provisions, and details the design standards for Federal-aid roads.

Circle 111 on Service Card, Page 53

Steel Storage Cabinet

A new steel storage cabinet, with swinging doors, a single central handle, and interchangeable interior parts that make the cabinet adaptable as a storage cabinet, wardrobe cabinet, or combination of both, is described in literature available from the Borroughs Manufacturing Co.

Circle 112 on Service Card, Page 53

Unit-Load Handling

Its latest Case History Report, No. 32, illustrating and describing handling operations at the Utica, Mich., plant of the Studebaker-Packard Corp., has been released by The Elwell-Parker Electric Co. It describes the efficient fork truck unit-load system of handling in which racks and containers of various types provide maximum effectiveness of handling large quantities of irregularly shaped components during receiving, production, storage and shipping.

Circle 113 on Service Card, Page 53

Loss and Damage Relief

Union Pacific Railroad has issued a pamphlet on furniture handling and inspection of damaged shipments. The pamphlet points out the class I railroads paid out almost six million dollars in loss and damage claims during 1954, and is aimed at reducing that figure. The pamphlet was prepared to assist freight station forces, agents and claim clerks in their work with furniture. It contains suggestions on checking, handling and stowing this fragile commodity.

Circle 114 on Service Card, Page 53

Plastic Flooring

A new application bulletin, descriptive of Steel-Hard granular plastic flooring compound, is announced by The Monroe Co. Reputed to easily withstand 20-ton loads, Steel-Hard is recommended for loading docks and aisles subjected to heavy industrial traffic. It is said to be particularly suitable for extra-heavy, steel-wheel trucking areas.

Circle 115 on Service Card, Page 53

Moving Supplies

Elkay Products Co. announces the new 1956 edition of its catalog of moving, shipping and storage supplies, comprising over 1,000 items illustrated with photographs and drawings. This catalog is 72 pages, and stresses the advantage of a "one stop" source for all supplies of this type.

Circle 116 on Service Card, Page 53

Shipment Addressing Stencils

Shipment addressing stencils that can be cut on typewriter, automatic tabulating equipment, Flexowriter, Teletype and other modern office machines as part of order-invoice writing procedure are the subjects of two new bulletins available from Weber Addressing Machine Co., Inc.

Circle 117 on Service Card, Page 53

Pressure-Sensitive Tape

Williamson Adhesives, Inc., has issued a brochure, announcing the Tapemaker—a basic new appliance for making pressure-sensitive tape as-you-use-it. Claimed features include trouble-free operation, quick and easy start-up, and a reduction in tape costs.

Circle 118 on Service Card, Page 53

Automatic Lubricator

A release issued by M-H Standard announces an automatic lubricator for its Monoflo rotating cable conveyor. In operation, the compact unit is hung over the rotating conveyor. A flow valve is opened and the lubricator travels to the end of the conveyor, dispensing a measured amount of oil along the entire length.

Circle 119 on Service Card, Page 53

Postage-Free Mailing Cards

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Name Position

Company

Street Address

City Zone State

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Reader Service



Boltless Steel Shelving

Klip-Bilt boltless steel shelving is the subject of a new 12-page illustrated color catalog released by The Frick-Gallagher Mfg. Co. The catalog contains a comprehensive discussion of the Klip-Bilt principle, showing how the shelving may be erected quickly and easily, as well as a detailed survey of the various models of open, closed, and ledge type shelving available.

Circle 120 on Service Card, Page 53

Heavy-Duty Grab

A circular describing Mansaver grabs for materials handling, has been released by the company. There are over 500 models available for use in all types of industry. The circular also includes specifications and features. Grabs are from ½ to 50 tons, and can be operated by hand or motor.

Circle 121 on Service Card, Page 53

Staplers & Staples

The complete line of stapling machines, equipment and accessories is offered in a publication, released by Bostitch. Hand-operated and air-driven staplers and wire stitchers are described and illustrated in detail. Model numbers and specifications data are included.

Circle 122 on Service Card, Page 53

Crane Electrification

Catalog No. 2021-A, is offered by The Cleveland Crane & Engineering Co., on their line of Inverted-Y Electrification, which now is being made available for application on all makes of cranes and runways.

Circle 123 on Service Card, Page 53

End-Loading Efficiency

End-loading has doubled the storage capacity of the central yards of Gordon Lumber Co. in Oak Harbor, Ohio, according to a new Hyster Field Report, No. 69. Using the M. H. End-Loader with side-shift on a 6,000-lb capacity lift truck, this company was able to end-pile up to 18 ft lengths on both sides of their 20-ft aisle. The side-shift feature allows added maneuverability and precise squaring-up of the load.

Circle 124 on Service Card, Page 53

Multi-Stop Bodies

Complete information on the range of International trucks with factory-mounted Metro multi-stop bodies is offered in a new 24-page catalog (form CR-619-F) made available by International Harvester Co. Color treatment is used throughout the book to present design and operating features of the eight S-Line forward control models in the SM-120, SM-130, SM-150 and SM-160 series that mount the various Metro bodies. Gross vehicle weight ratings range from 5,400 to 18,000 lb. A wide range of body designs and capacities is offered.

Circle 125 on Service Card, Page 53

Shipping Containers

A new shipping container catalog, illustrating and describing the broad line of shipping containers manufactured by Chicago Mill and Lumber Co. is available. Containers made of plywood, cravenner, corrugated, veneer or sawed material in cleated, hinged, nailed or wirebound designs. It also includes returnable containers, pallets and other specialties.

Circle 126 on Service Card, Page 53

For prompt service, use postage-free postcard provided to obtain FREE LITERATURE and NEW PRODUCT information described in this issue. All material is FREE unless otherwise noted.

Overhead Conveyors

A new bulletin on Coburn overhead conveying equipment has been made available by Colorado Fuel and Iron Corp. The illustrated bulletin describes many of the Coburn lines of overhead conveying equipment and hardware, including chain hoists, monorail carriers, continuous conveyors and various types of locks, switches and transfers.

Circle 127 on Service Card, Page 53

Self-Aligning Bearings

A new 72-page Catalog on Shafer Self-Aligning Roller Bearings has been published by the Chain Belt Co. The new catalog contains specification and data pages on all models of Shafer units. These various models have shaft sizes which range from ¼ to 7 in.

Circle 128 on Service Card, Page 53

Drum Handling Equipment

A four-page folder published by the Morse Mfg. Co. describes the firm's line of manual and motorized drum handling equipment. In addition to drum cradles, lifting hooks, hand trucks and tipping levers, the new folder describes the Morse Portable Drum Rotator.

Circle 129 on Service Card, Page 53

Labor-Saving Conveyors

Wehle Conveyor Co. has issued a booklet outlining its line of space and labor saving conveyors. Included are descriptions and illustrations of cart conveyors, pallet conveyors, all types of floor-to-floor conveyors, hamper and truck conveyors, and a portable shiploader conveyor.

Circle 130 on Service Card, Page 53

Measuring Device

Bulletin D4, issued by W. C. Dillon & Co., Inc., illustrates and describes the Dynamometer unit which measures traction, tension or weight. It is claimed to offer the most practical solution where accuracy and portability are required.

Circle 131 on Service Card, Page 53

(Please Turn to Page 118)

BOOKS

DA Piggy-Back Routing Guide Issued

DISTRIBUTION AGE has published a completely revised edition of its "DA Piggy-Back Routing Guide." The revised Guide, which lists all points in the U.S. and Canada to and from which Piggy-Back is available, was necessitated by the phenomenal growth of TOFC in the seven months since the original Guide was published in September of last year.

The new Guide consists of two principal parts—an Index to Points, and a Piggy-Back Routing Table. Through use of the Index and Table the traffic manager or shipper can determine, in a matter of seconds, whether or not Piggy-Back service is available between any two or more points in which he is interested.

The Index lists, geographically by alphabet, all points served by Piggy-Back, and railroads offering the service. The Table lists, by key number, each point as an originating city, showing to what other cities Piggy-Back is available from that point.

By way of comparison, the original Guide listed 157 major points and several hundred minor points offered Piggy-Back service by 32 railroads—the new Guide lists more than 1,200 points served by 41 railroads.

Single copies of the eight-page Guide are available at 25 cents each by writing DISTRIBUTION AGE, Chestnut & 56th Sts., Philadelphia 39, Pa. Prices on quantity lots on request.



PRODUCTS

... FOR FURTHER INFORMATION

Tailgate Loader

The Van Corp. has introduced a new electric tailgate loader for $\frac{1}{2}$, $\frac{3}{4}$ and 1-ton pick-up trucks, that raises 600 lb in 15 sec at the touch of a switch. Model 300 weighs 215 lb and has a platform size of 28 in. x 4 ft. The switch is rain tight and the heavy bronze worm gear and steel worm have been tested for 10,000 cycles under full load.



Installation is accomplished by simply drilling a few $\frac{3}{8}$ -in. holes and bolting loader to truck. Then the cable is attached to the starter switch and the loader is ready for action.

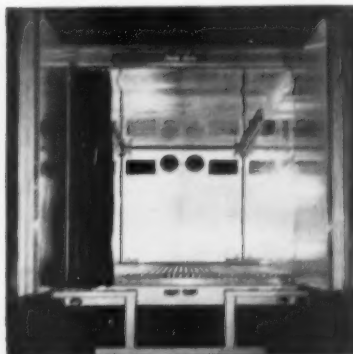
Circle 151 on Service Card, Page 53

Refrigerator Van

A refrigerated van with a sliding partition to separate the freezing compartment from another section that's merely cold has been introduced by **Kingham Trailer Co.**

The 34-ft van is constructed of aluminum, inside and out, primarily because of that metal's high degree of thermal conductivity. The temperature in the trailer's front compartment can be

maintained at zero, if desired, while the rear compartment is kept



at a relatively mild 40 deg F. The partition may be moved as much as 12 ft; 6 ft forward of the center or 6 ft backward. It slides on an overhead rail and two side tracks.

Circle 152 on Service Card, Page 53

Platform Truck

A new line of medium duty, all steel platform trucks, combining light weight, maneuverability and rugged construction, is announced by **Milwaukee Truck Co.**



Four different models are offered for varying load and application requirements. Deck sizes are 18 x 32 in., 24 x 48 in. and 24 x 36 in. Load capacities range from 500 to 750 lb. All models are equipped with solid rubber wheels for quiet operation, floor protection and extra load cushioning.

Circle 153 on Service Card, Page 53

Standard Wire Baskets

The Chas. Wm. Doepke Mfg. Co. has announced the addition of wire baskets to its NesTier line of parts handling equipment. Number of standard sizes offered range from 18x10x3 in. to 24x14x12 in. In addition, facilities are available for design and production of special baskets and inserts to meet



individual requirements. The baskets are welded on special machines equipped with automatic controls. Regularly furnished in bright basic steel wire, they are also available in other materials, including stainless steel.

Circle 154 on Service Card, Page 53

Strapping Tensioner

A flick of the wrist will cut off the excess strapping automatically when this newly-improved tensioner is used. Manufactured by **Allegheny Steel Band Co.**, this Model DC 2600 heavy duty Tensioner is designed for use with



$\frac{3}{4}$ -in. x .028 to 1 $\frac{1}{4}$ -in. x .035 steel strapping. It works equally well on both horizontal and vertical surfaces.

Circle 155 on Service Card, Page 53

and EQUIPMENT

PLEASE USE THE READERS' SERVICE CARD • • PAGE 53

Industrial Tote Boxes

A series of new industrial tote boxes that are non-rusting, non-corrosive, and cannot be dented, are being offered in four standard sizes or to individual requirements by Luria-Cournand, Inc. The new tote boxes (Model LTD), which may be compartmented to hold different small parts, are molded

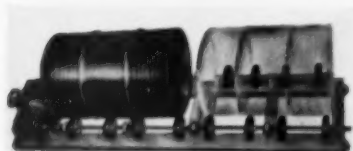


of rubber styrene. Standard sizes available are 8x8x6 in. high, 15x12x10, 24x15x12, and 15x14x5 $\frac{3}{4}$. The four standard size tote boxes are nestable.

Circle 156 on Service Card, Page 53

Double Drum Rotator

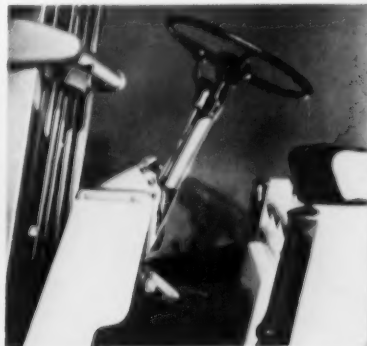
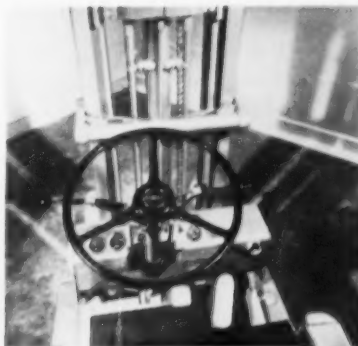
The Morse Mfg. Co. has added to its line of drum handling equipment a new stationary double drum rotator, which utilizes two complete rotating units operated by one motor—each unit capable of a load up to 1,000 lb. The new rotator can be used for agitating, mixing, and tumbling in the orig-



inal container. Four of eight Neoprene drive wheels on each rotator hold the drum ribs to prevent creeping.

Circle 157 on Service Card, Page 53

Clark Presents Completely New Fork-Truck Line



The new Clarklift Line of forklift trucks recently was introduced by the Clark Equipment Co. Claimed to be new from the wheels up, the line reflects current automotive trends by the inclusion of a 12-volt electrical system, fully automatic transmission, emergency fuel tanks, foam rubber seats, and automobile-like controls as standard equipment.



Additional features, reported never before available on fork trucks, include self-adjusting brakes, a balanced swing-up hood, solid tire models with drive and steer wheels of the same diameter, combination lift-tilt controls on the steering column, optional radiator screens for dusty operations, and all-purpose, deep-tapered forks. Newness is accentuated by functional styling such as chrome-

plated air scoops framing the driver's seat, and a swept-back counterweight.

Gas models of the Clarklift Line with capacities ranging from 2,000 to 5,000 lb now are available. Electric models and gas models of higher capacity will be added in the near future.

The new line includes the Super Yardlifts, pneumatic-tire models designed specifically for all-weather outside work. Tubeless, high flotation, deep width tires are available with pressures of 30 psi or 75 psi, and are interchangeable.

Circle 158 on Service Card, Page 53

Retail Delivery Truck

New in the retail bakery and door-to-door delivery field is the completely redesigned International-Harvester Model SA-120 truck chassis with 7-ft Metroette delivery body. It contains all the functionally desirable features demanded for retail delivery of bakery and similar goods, including large work area in the driver compartment, to facilitate load-working from the front. Automatic transmission with stand-drive is available.

Driver-salesman convenience,
(Please Turn Page)

DA NEW PRODUCTS and EQUIPMENT

CONTINUED FROM PREVIOUS PAGE

comfort and safety are stressed along with carrying capacity. Work area in the driver compartment has been increased by lengthening the drop portion 16 in. in the 115-in. wheelbase model,



adding to the available working aisle correspondingly. Conventional sit-drive controls are available with any of three standard transmissions or Metro-Matic transmission. The stand-drive feature is available, with removable seat optional, with Metro-Matic automatic transmission.

Circle 159 on Service Card, Page 53

Interchangeable Type

Removable and interchangeable typewriter—a new development permitting the typist herself to change one or all of the characters on her machine in a matter of



minutes—is featured on the 1956 standard typewriter announced by Remington Rand, Division of Sperry Rand Corp.

Among the other features of the new standard is an expanded 44-

character keyboard which enables the user to take maximum advantage of the new interchangeable type, and provides four extra characters in its standard arrangement: section and paragraph marks, a plus sign and an equal sign.

Circle 160 on Service Card, Page 53

Transistorized Microphone

Motorola has announced a transistorized dynamic microphone for mobile radio applications. The new accessory reportedly provides unprecedented mobile transmission quality comparable to that of a base station.



The microphone features a specially designed dynamic element employed in conjunction with a built-in transistor preamplifier. Unexcelled voice intelligibility from the mobile unit is said to be readily demonstrable.

The transistor preamplifier, an integral part of the microphone, boosts the dynamic output to conventional transmitter input level, eliminating the need for a preamplification at the transmitter. This technique overcomes the noise pickup problem inherent in mobile installations. The amplifier draws its power from the conventional "talking current" supply.

Circle 161 on Service Card, Page 53

Hydraulic Utility Table

A newly designed, hydraulically operated utility table of 1,000-lb capacity has been developed by Rack Hydraulic Equipment Corp. The table top, which is 28 in. above floor level and has an elevation of 16 in., is elevated and lowered by means of a foot treadle. The combination of variable working

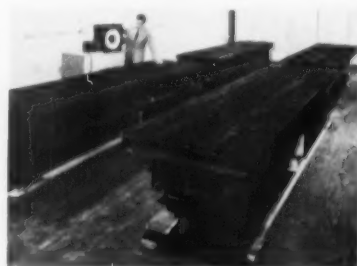


heights and 5-in. diameter caster wheels with roller bearings makes the table suitable for a variety of industrial applications. Table dimensions are 20x26 in. An overload by-pass valve provides safe operation and prevents damage to the hydraulic unit.

Circle 162 on Service Card, Page 53

Trailer Scale

Highway truckers will find it easier to meet highway limitations on axle and gross weight, as well as to keep every load close to 100 per cent pay load, if they use a new type trailer scale developed by Baldwin-Lima-Hamilton Corp.



The scale is intended primarily for use at loading docks of terminals operated by common carriers.

The new model is an electrical scale with no moving parts under

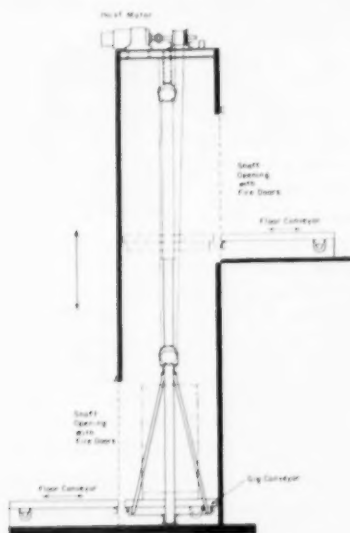
the weighing platforms. Weight is measured by means of eight Baldwin SR-4 load cells, two of which support each of four platforms.

Four platforms are provided for each loading dock installation. Each is 149 in. long and 42 in. wide. The platform units will be placed in concrete pits only 27½ in. deep so that the top surface will be flush with the road surface.

Circle 163 on Service Card, Page 53

Interfloor Conveyor

Smooth transfer of large heavy pallets loaded with bottles or other breakable materials is provided by new interlocking and leveling features of an automatic interfloor conveyor system announced by Gifford-Wood Co. The high-speed conveyor moves pallets through 27 conveying steps in 1½ min.



Handling loads up to 6,000 lb., the automatic system is designed for speed, safety (with electric switches interlocking each of the transfer steps) and maximum pallet stability provided by smooth-moving chain conveyors and a new type leveling device.

The interfloor system consists of a vertical pallet conveyor, or gig, twin or triple chain conveyors on each floor for moving pallets into and out of the gig, and necessary control and safety devices.

Circle 164 on Service Card, Page 53

Automotive Industry Influences New Fork Truck Line

Availability of a new line of fork trucks, including gasoline, LP-Gas, diesel and electric powered models, has been announced



by The Yale & Towne Mfg. Co. The line incorporates many engineering features currently popularized by the automotive industry.

The grouping of completely waterproofed instruments is recessed into the lowered cowl, and arranged for maximum visibility.

Controls for hoisting, lowering, and tilting, as well as for the operation of attachments for handling many different types of loads, are conveniently located for conventional right-hand operation directly beside the operator. This arrangement leaves the left hand free for steering.

Forward or reverse travel mo-



tion is obtained by the mere flick of a switch on the steering column.

Circle 166 on Service Card, Page 53

Anti-Abrasion Coating

Finishes of metal surfaces are left free of waxy deposit when corrugated packaging pads are treated with a new anti-abrasion coating developed by Stone Container Corp. The improvement is illustrated here with two laundry appliances and their interior packaging corner pads. At left is shown how deposits must be scraped from the product when the pad is coated with conventional paraffin wax. At right, no

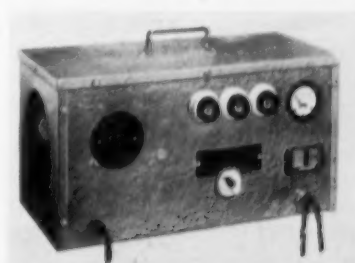


such deposit is left by a pad post treated with the new coating, Stone-ize. Leaving no residue or only a fine white powder that is instantly wiped off.

Circle 165 on Service Card, Page 53

Battery Charger

Baldor Electric Co. has announced a new line of industrial type battery chargers. The line in-



cludes 20-ampere types for 24-volt and 36-volt lead acid batteries and 60-ampere type for 12-volt lead acid or 10-cell nickel alkaline.

The chargers are compact, portable, and may be plugged into a 115 volt electrical outlet. After the operator sets the time switch, provided as standard equipment, the charger shuts down automatically the starting rate to a proper finishing rate and automatically shuts off the finishing rate after four hours.

Circle 167 on Service Card, Page 53

(Please Turn to Page 124)

Warehouse SPOTLIGHT

Walde Named President of AWI

At the 22nd Annual Meeting of Associated Warehouses, Inc., held last month at the Ambassador Hotel, in Los Angeles, A. O. Walde, of Los Angeles, was elected president. Other officers named include: W. C. Strobel, Saginaw, vice-president; W. F. Winters, Buffalo, treasurer; C. E. Phelps, Chicago, executive vice-president, and W. Castle, Chicago, chairman of the board.

Associated Warehouses, Inc., announce the addition of the following new members: Terminal Warehouses, Ltd., Toronto, Canada; The Galt Block Warehouse Co., Portland, Me., and Bangor, Me.

10th Annual Institute



Some of the experts who attended the 10th annual Rail Transportation Institute, conducted recently under the auspices of the American University, Washington, D. C., visit the Mt. Clare Shops of the Baltimore and Ohio Railroad in Baltimore. Later, the group visited the railroad's Transportation Museum, toured its waterfront facilities at Locust Point and Curtis Bay in Baltimore, and were taken on a harbor tour of the Port of Baltimore

DSI Elects Cornwall

R. M. Cornwall, of Salt Lake City, Utah, was elected president of Distribution Service, Inc., at that organization's Annual Meeting at the Hotel Statler in Los Angeles last month. D. E. Taylor, of Seattle, Washington, was named vice-president, and H. F. Partidge, of Chicago, Ill., was named treasurer. J. G. Temple, of Chicago, Ill., is secretary.

Production increases ranging from 7 per cent to as high as 40 per cent over 1955 output, are predicted by major perishable food firms in a report recently published by the National Association of Refrigerated Warehouses.

Warehouse Briefs

The Public Warehouse Co. Inc., Oklahoma City, Okla., announces the construction of a new 120,000-sq-ft warehouse at 2700 W. Main St., to be ready for occupancy July 1.

North American Van Lines, Inc., Fort Wayne, Ind., has placed orders for 160 new trailers to increase its fleet capacity.

The Fortune Transfer Co., Seattle, Wash., celebrates its 50th Anniversary this year.

D. H. Overmyer Warehouse Co., announces the opening of a new warehouse and facility in Jacksonville, Fla. The building, located at 520 Champion Ave., contains 52,000 sq ft of storage space, is of one story construction, and sprinklered throughout. The company also announced the start of construction of a new one-story warehouse containing 76,000 sq ft of space, in Tampa, Fla.

ACW Elects Officers

The American Chain of Warehouses, Inc., held its Annual Meeting last month at the Hotel Statler, Los Angeles. The following officers were named for the year 1956: W. C. Hudlow, Jr., of Chattanooga, Tenn., was elected president, and J. N. Pettit, of Fort Wayne, Ind., was elected vice-president. J. C. Miller, of Little Falls, N. Y., was re-elected treasurer, and J. W. Terreforte, of New York, was re-elected executive secretary and assistant treasurer. H. H. Becker, of Chicago, was re-appointed western manager, and J. W. Terreforte also was re-appointed eastern manager.

Men in the Spotlight

Jay Weil, Jr.—president, Gulf Ship-side Storage Corp., recently received the first annual Progress Award, presented by The Traffic Club of New Orleans.

Earl S. Tiedeman — appointed operations manager, Wolverine Storage Co., Detroit, Mich.



Russell C. Minear — named vice president of operations, North American Van Lines, Inc., Fort Wayne, Ind. Stanley P. Troxel — appointed vice president in charge of all West Coast operations, with headquarters in Los Angeles. Milton B. Chase — new operations manager in Fort Wayne. James T. Murphy — named operations manager, Creston Division.

Warehouse Changes Hands



Paul A. Rensch, Sr. (seated left), completes contract for purchase by Richard E. Joyce, president, Joyce Bros. Storage & Van Co., of Rensch Fireproof Warehouse, Inc., Wilmette, Ill. This unit becomes No. 9 in the Joyce Bros. chain. Standing (l to r): G. B. Johnson, M. J. Joyce, and Marshall Rensch

Allied Renames Leet

W. D. Leet, of Chicago, was re-elected president of Allied Distribution, Inc., last month at the Annual Meeting in Los Angeles. Other officers named include: William Brown, western vice-president; James J. Robertson, eastern vice-president; and Leonore Leet, secretary-treasurer.

—DA—

The Movers and Warehousemen's Assn. of America, recently held its 21st Annual Convention in Hollywood, Fla., with some 375 delegates in attendance. Among the new officers are the following: Gladys Theus, Oklahoma City, regional vice-president; G. T. Howard, Dallas, director; and J. Stewart, Dallas, director.

—DA—

NITL Names New Committee

Lowe P. Siddons, president, the National Industrial Traffic League, appointed the following public merchandise warehousemen to serve on a new Warehouse and Distribution Committee recently established by the League: Chairman, R. C. Stockton, Chicago; and Vice chairman, G. J. Pinkerton, San Francisco, Calif. Other committee members are: A. M. Crighton, New Orleans, La.; A. J. Crooks, Kansas City, Mo.; G. E. Heckel, St. Louis, Mo.; W. W. Huggett, Chicago; R. J. Laubenstein, Green Bay, Wis.; E. C. Miller, Port Huron, Mich.; Philip Milstein, Denver, Colo.; Richard L. Otto, New York; E. F. Streib, Cincinnati, O.; and Allan H. Wilson, Buffalo, N. Y.

New Addition



United Warehouse Co., recently announced the addition to its chain, of a new warehouse located at 811 E. Waterman, Wichita, Kans. Features of this fireproof and sprinklered building include 118,000 sq ft of floor space, 2,490,928 cu ft of available space, undercover docks, 10-car private siding, and heated space for perishable merchandise.

Sixth Annual American Red Ball Convention



Some 300 affiliated American Red Ball Mover delegates from all sections of the country recently attended the Sixth Annual Convention at Indianapolis, Ind. The three-day meetings included discussions dealing with merchandising, account solicitation, expediting of moving operations and traffic, etc.

AWC Holds Annual Meeting

Affiliated Warehouse Cos. held its Third Annual Meeting last month at the Hotel Statler, Los Angeles, Calif. Prior to the business sessions, the members of the group made a tour of the Central Manufacturing District and the Pacific Coast Terminal Warehouse. AWC also held a reception in honor of the Convention guests.

—DA—

The Ohio Warehousemen's Assn., recently held its 49th Annual Meeting in Cincinnati, O. The new officers elected were: C. H. Geib, Akron, president; H. W. Verrall, Dayton, vice-president; A. M. Lounsbury, Cleveland, treasurer; and J. F. Ray, Jr., Cleveland, executive secretary.

—DA—

Obituaries

Walter B. Allen—senior partner, American Warehouse & Storage Co., Amarillo, Texas, recently died as a result of an automobile accident.

Miss Esther M. Mole—secretary and a director of the National Warehouse Corp., Milwaukee, Wis., recently passed away.

Arnold Kampe—secretary-treasurer of Wiley & Nicholls, Galveston, passed away unexpectedly.

Leo Joseph Fisher—vice president, Harborside Warehouse Co., Inc., Jersey City, N. J., recently died as a result of injuries suffered in an automobile accident.

The Minneapolis-Northwest Warehousemen's Assn., held its 46th Annual Convention last month, in Minneapolis, Minn.

—DA—

Overmyer Names Board

The Second Annual Meeting of the D. H. Overmyer Warehouse Sales Co., was held last month in Los Angeles, at which time the following 14-member advisory board was appointed: R. Smart, Portland, Ore.; W. Desper, Los Angeles; J. Kemp, San Francisco; W. Whiting, Cincinnati, O.; J. Duffy, Denver, Colo.; H. Wedland, Kansas City, Kan.; B. Reynolds, Houston, Texas; J. E. Larson, Minneapolis, Minn.; C. W. Herbert, Worcester, Mass.; C. B. Eslick, Mason City, Ia.; A. Peyrillitte, New Orleans, La.; W. R. Garrison, Akron, O.; and G. Kerwin, Toledo, O. D. H. Overmyer was named chairman.

—DA—

Reelected to serve second terms in 1956, were the following officers of the Massachusetts Warehousemen's Association: President W. A. Harnedy, Hoosac Storage & Warehouse Co.; Vice President, P. L. Amon, Atlas Terminal Stores; Treasurer, C. B. Payson, Farnsworth Merchandise Storage Co.; and Secretary, E. W. Hathaway, Commonwealth Ice & Cold Storage Co.

Within the



By Leo T. Parker Legal Consultant, Distribution Age

WAREHOUSING

Who gets custody of stored goods in the event of family separation?

Recently a warehouseman wrote as follows: "In 1954 we received an order signed by a housewife to pickup a shipment of furniture for storage. We got the furniture and stored it in our warehouse. After six months the woman paid all charges and took away the furniture. A few weeks ago an attorney for the husband called us and inquired if we had the goods. We told him that we had had them but that the wife had taken them from our storage warehouse. Now, the attorney claims that we are guilty of 'conversion' or some such act because the furniture is in the name of the husband. Since we had a genuine order signed by the wife and we had no knowledge of any domestic troubles when we picked up this shipment, how could we be held liable? Please list me some court cases in my favor."

The higher courts consistently hold that all warehousemen assume full responsibility of knowing that goods and merchandise taken for storage actually is owned by the person who claims ownership. For example, if a wife stores furniture with a warehouseman who later sells it to secure delinquent charges, the warehouseman is liable for conversion to the husband who later proves that he, not the wife, was legal owner of the furniture. Of course, this rule of law would not be applicable if the husband authorized the wife to act as his agent in storing the furniture, and the warehouseman did not know, nor had no reasonable opportunity to discover, that the furniture belonged to the husband.

Various courts have held that a person who sues a warehouseman for wrongful delivery of stored goods is bound to prove that the warehouse-

man failed to perform his legal duty.

For illustration, in *C— v. N—*, 250 Pa. 559, it was shown that a warehouseman accepted goods for storage from a son. Later the warehouseman sold the merchandise for the debt of the father. The son instituted legal proceedings against the warehouseman to recover the value of the merchandise to which he "claimed" ownership.

The warehouseman introduced testimony showing that the father had claimed ownership to the goods when he placed them in storage, and that the son did not assert his ownership at that time. These details of the testimony were submitted to a jury and it rendered a verdict in favor of the warehouseman.

The son appealed to the higher court which sustained the verdict of the jury and explained that the burden is on a complaining patron to prove that merchandise in controversy belonged to him, and since the son had not positively proved ownership, the warehouseman was lawfully entitled to sell the stored goods to secure payment for the storage debt.

For comparison see *T— v. S—'s Moving & Storage Co.*, 212 S. W. (2d) 566. Here it was shown a wife stored household goods in a warehouse and took the warehouse receipt. When the couple were about to separate the husband notified the warehouseman that he owned the goods. The warehouseman wrote the husband that he must deliver the goods to the wife should she present the original warehouse receipt, pay the charges, and demand delivery.

Later a divorce was granted the wife who notified the warehouse company custody of furniture "Lot number 5495 granted me through divorce." Soon afterward the divorced wife, with the aid of a constable, took possession of the household goods without presenting the warehouse receipt since she had, without knowledge of the warehouseman, given it to her divorced husband.

The husband sued the warehouseman for actual and punitive damages amounting to \$15,000 for an alleged wrongful conversion of the household furniture.

The higher court refused to hold the warehouseman liable saying that the husband, although claiming he was owner of the furniture did not at any time prove that he actually was the lawful owner of the goods.

For further comparison, see *S— v. R—*, 46 S. E. (2d) 152. In this case it was shown that a woman deposited valuable merchandise with a warehouseman for storage. Later a man presented the receipts and stated he was the husband of the woman who deposited them. The goods were delivered to him.

The woman sued the warehouseman for conversion and proved that she had not authorized her husband nor any other person to take delivery of the goods. The lower court held the woman entitled to recover \$1,500, the "estimated" value of the goods. The higher court reversed the verdict stating that to have a valid verdict, the woman must prove the actual value of the converted goods.

Therefore, this warehouseman won a favorable verdict simply because he convinced the higher court that the jury's estimate of the value of the converted goods was incorrect.

How can warehousemen avoid financial loss in the event of family separation?

A review of higher court decisions discloses that in many past instances courts rendered decisions adversely to warehousemen who were compelled to pay either the husband or wife full value of converted goods to which the other claimed ownership. This situation may arise, for example, where a wife stores merchandise or goods in her own names and then withdraws them from storage, and later the husband sues the warehouse-

(Please Turn to Page 144)

DA Materials Handling Primer—X

5. Self-Loading Systems

By D. O. Haynes

DA Materials Handling Consultant

LOW-LIFT PLATFORM AND FORK TRUCKS

Self-loading machines representative of the skid and pallet systems of handling, reflect in their construction features the differences between the two carriers. Platforms are used to support skids, which accounts for the designation skid platform system frequently applied to that method. Forks or fork-like arms are characteristic of the pallet and fork truck systems unique equipment.

Low-lift trucks slightly elevate the skid or the pallet, transport it and set it down. In contrast, high-lift machines can pick up, transport, tier and set down their

burden. These operations all are performed without additional handling. They are sometimes said to function without breaking bulk. Both types are true self-loaders.

Because the low-lift machines of both systems have features in common, and since certain characteristics are utilized in high-lifts for skids and those for pallets, the logical way in which to discuss these machines is in groups based on the amount of elevation afforded.

Low-lift skid and pallet trucks may be manually operated or powered.

The sketches illustrate not only the salient parts, but also the important dimensions of the low-lift trucks used to transport skids and pallets. They also serve to show distinctive differences between the two types.

Hand truck manufacturers who offer machines of this category almost invariably include both types in their lines. Based on the method used to elevate them, we find the following:

Mechanical Lifts

Single stroke

Multiple stroke

Hydraulic Lifts

Hand Operated

Single stroke

Multiple stroke

Foot (or Pedal) Operated

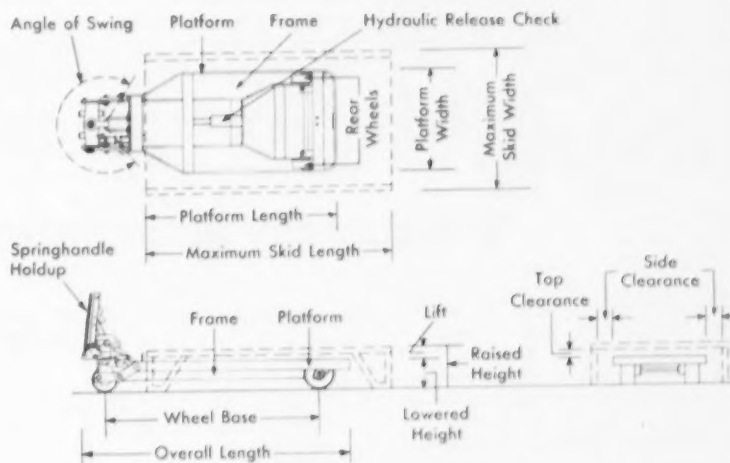
Multiple stroke

Low-lift pallet trucks usually have hydraulic lifts—hand- or foot-operated—and with multiple-stroke action.

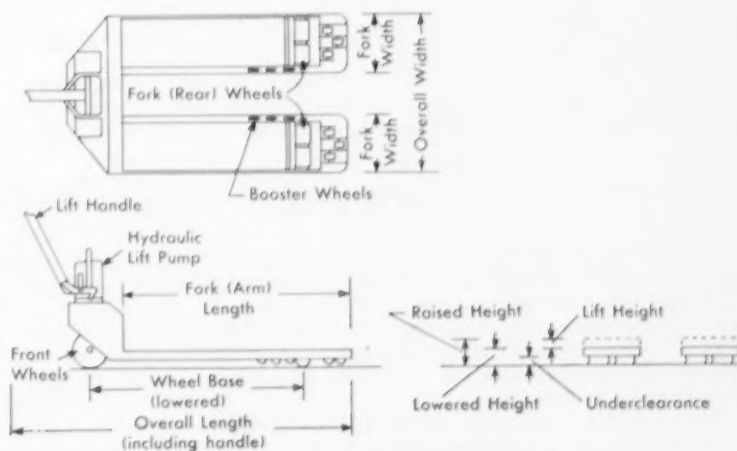
As might be expected there is considerable difference in the capacities of mechanical and hydraulic machines. For example, low-lift skid models with mechanical lifts vary in capacity from 1,000 to 5,000 lb. With hydraulic mechanisms the range is increased from 2,500 to as high as 15,000 lb. Similarly with the pallet trucks, those that have mechanical lifts vary from 2,500 to 3,500 lb, while the hydraulic types range from 2,000 to 6,000 lb. These are representative of stock models. Special machines have been built with even greater load-carrying ability.

One may question why the skid models have greater capacities than the pallet trucks. The reason is that the former, because of the greater underclearance with skids than with pallets, have wheels that are considerably larger, and hence easier to push or pull.

LOW-LIFT HAND TRUCKS

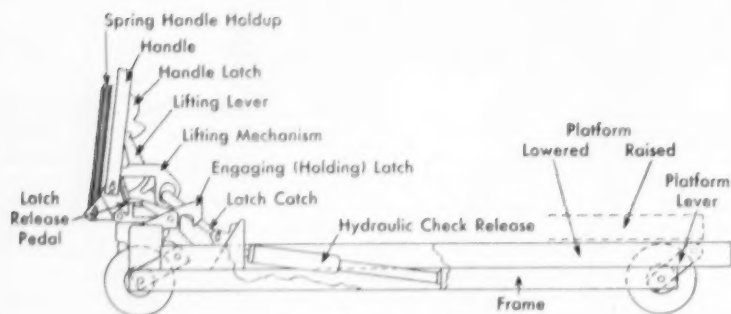


LOW-LIFT SKID PLATFORM HAND TRUCK



LOW-LIFT PALLET HAND TRUCK

SINGLE-STROKE MECHANICAL LIFTS FOR SKID TRUCKS



SINGLE-STROKE SKID TRUCK

The hydraulic check release usually is optional on low-capacity machines, but is a desirable feature where heavy loads are handled. This device consists essentially of an oil cylinder and a piston. When the truck is raised, the piston moves forward and oil is drawn into the cylinder. When the truck is lowered, the piston forces

the oil from the cylinder through a small check valve. Thus the downward motion is controlled.

Single-stroke machines usually are limited to loads ranging from 2,000 to 3,500 lb.

A machine fitted with this type of lift is elevated by a single downward stroke of the handle.

The mechanical construction of all makes are essentially the same. The platform is mounted on a frame by means of short lever arms. As the platform is pulled forward, it moves through an arc because of the constraining action of the levers. The simultaneous forward and lifting motions are effected by a lifting train, which acts as a connector between the platform and the handle. A full downward sweep of the handle gives maximum platform elevation.

The lifting latch engages the platform until full elevation. The holding latch then takes over and the lifting latch is disengaged so that the handle is free to maneuver the truck.

A relatively simple method for lowering the truck is accomplished by engaging the lifting latch, releasing the holding latch and elevating the handle.

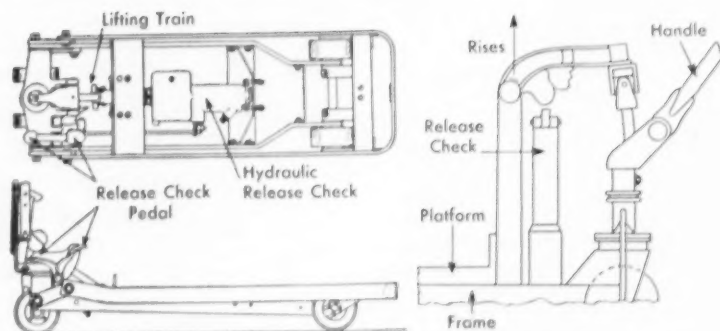
In some models the lifting latch is controlled by a pedal. In others it functions automatically.

SKID PLATFORM MULTIPLE-STROKE LIFTS

The advantages offered by multiple-over single-stroke mechanisms are that short strokes of the handle are easier on the operator, heavier load capacities can be handled, and the lift is variable—just a few strokes provide sufficient clearance for running over smooth floors.

The hydraulic check makes possible this type of lift. As the handle pumps the load up, the check holds it in position while the handle is returned to take another bite. A foot pedal is utilized to release the hydraulic check and the load is eased down into the lowered position.

When the hydraulic check is set vertically the load is lifted straight up.



TRUCKS WITH FORWARD-UPWARD AND STRAIGHT LIFTING

This permits the platform to rise vertically instead of in an arc. This is an advantage in spotting loads—there

is no danger of the load scraping against a wall, column or adjacent load.

HYDRAULIC LIFTING SYSTEMS

Hydraulically operated lifts have greater mechanical advantage than those that are elevated mechanically.

The hydraulic jack lifts the load, checks it from slipping down and permits easy lowering. These three functions are in contrast to the mechanisms in which the hydraulic cylinder serves merely to hold and to check the load in setting it down.

The pump, which multiplies the effort of the operator, can be actuated in a number of different ways. Two are shown in the drawings. The first is by moving the handle

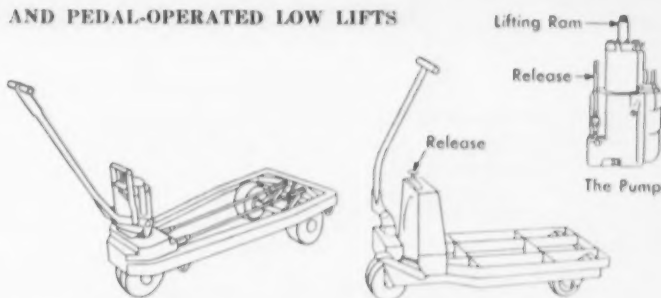
up and down, the second by alternately exerting pressure on and releasing it from a foot pedal. A third method, not shown, is to move an actuating handle back and forth through short strokes. The result is the same in all cases. Pressure is exerted on the oil in a relatively small cylinder and is transmitted to a large cylinder where the lifting ram is housed. Hand or foot operation usually is a matter of individual operator preference.

Hydraulic skid trucks handle loads up to 15,000 lb—far greater than one man can maneuver alone.

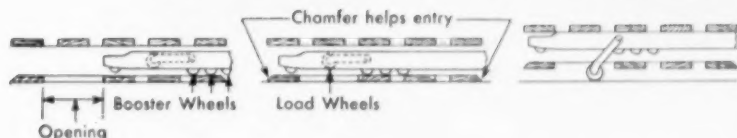
SELECTION FACTORS

Ease of lift; ease of maneuvering; wide angle of handle operation, large diameter wheels and proper wheels and tires; adjustable hydraulic check (when this is part of the equipment); ample underclearance to prevent hanging up on ramps or catching on door sills; a good lubrication system and stability, especially at the front end, are important features in selecting a low-lift skid hand truck.

HAND- AND PEDAL-OPERATED LOW LIFTS



HOW FORKS FUNCTION IN LOW-LIFT PALLET TRUCKS



In contrast with skid platforms which slide under the clearance between the platform of the skid and the legs, fork arms normally must enter the openings between the upper and the lower decks of pallets, and also between the three runners. There are dimensional limitations which the arms of fork trucks must meet. For example, the distance between the top and bottom deck boards is standardized at between $3\frac{1}{2}$ to 4 in. The width of the two openings depends

upon the overall width of the pallet and the width of the runners.

To meet the physical characteristics of pallets, the fork arms almost invariably are equipped with booster and frame rollers which help the forks ride over the bottom boards. There usually are three such in the rear end of each fork arm. They are set staggered. In some trucks additional wheels are set in the frame on one side near the load wheels. One manufacturer uses a patented spring-

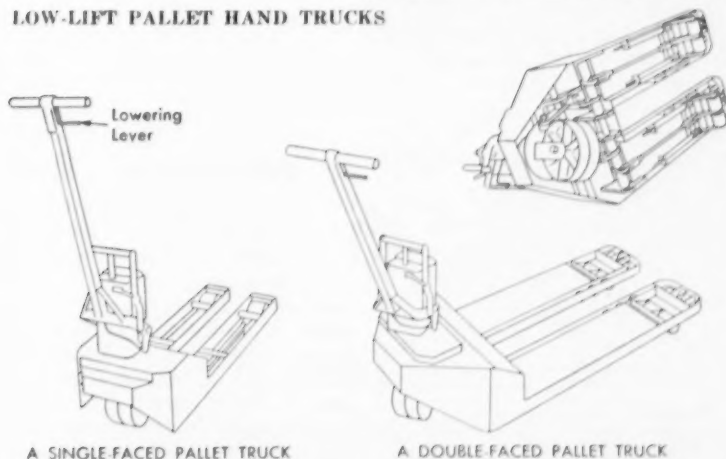
lift roller at the rear end to help the machine over the bumps.

Within the fork frame are located one or more load wheels. They are mounted at the ends of lever arms so that they may be swung down and up. The diameters of these wheels have been standardized at $3\frac{1}{4}$ in.

When the forks are positioned fully under the pallet, the wheels are located over the openings in the bottom deck of the pallet. When the lever arms are pulled forward, the wheels swing downward through an arc, make contact with the running surface and, when further depressed, start to elevate the pallet. Simultaneously, the front end of the fork arms have been raised so that both ends are elevated equally.

WHEEL ARRANGEMENTS

LOW-LIFT PALLET HAND TRUCKS



A SINGLE-FACED PALLET TRUCK

A DOUBLE-FACED PALLET TRUCK

Some manufacturers utilize a single load-carrying wheel in each fork. Others have two mounted on a common axle. Still others use two wheels set tandem, one behind the other. Wheels arranged in the latter way can be made articulated to help in

transporting over rough runways. They require larger bottom openings in the pallets than are needed for single wheels.

Steel, plastic and rubber composition wheels are optional.

Although the usual models of these

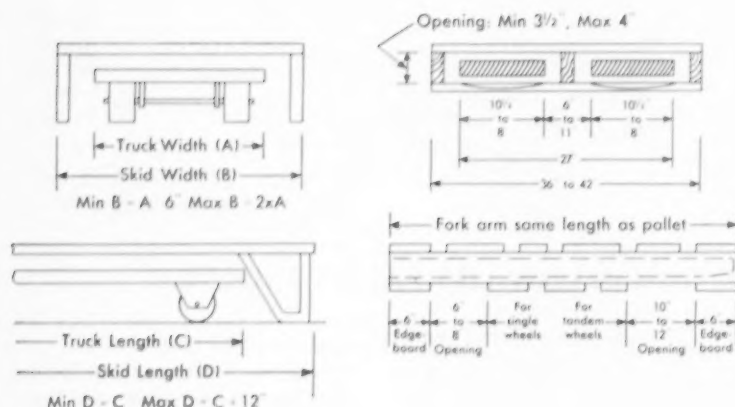
machines are made as light as possible consistent with strength, there are those made with wheels and some structural parts of aluminum to further reduce the weight.

Platform trucks cannot handle pallets, but fork-equipped machines can be utilized with both skids and pallet.

In order to raise the carrying surface of the fork's arms to a position where they will be high enough to engage the under side of a skid, a frame can be provided. When not in use, the frame can be swung up.

In selecting the right length of forks for a given application (see next page for critical dimensions), the length of the pallet is not always the determining factor. When overhanging loads such as those made up of bags are to be handled it often is advantageous to have the forks six inches longer than the pallet and to place a stop that distance from the front end to keep the loads from being squeezed by the truck when the machine is positioned under the pallet.

FITTING SKIDS AND PALLETS TO TRUCKS



A number of critical dimensions are important in selecting a low-lift truck for either skids or pallets. The accompanying sketches show those which must be taken into consideration.

It is not always a matter of fitting the carrier to the machine. In some instances the reverse is true. It usually is a matter of compromise to select both elements so that they work well together.

POWER SPEEDS UP AND EASES HANDLING OPERATIONS

Powered high-lift platform and fork trucks were developed several years ago, but powered low-lift trucks did not appear until about 1937, some ten years after the first tiering fork truck made its debut.

The early low-lifts were called walkies or operator-led trucks. This designation has become somewhat obsolete with the advent of walkies on which the operator rides.

The result of adding power to low-lift trucks has extended the scope of both skid and pallet handling. They have earned their places among the power industrial truck family.

Early models were crude compared with the streamlined machines of today. The prototypes were pedal-operated for elevation, but it was not long before this function also was powered. It takes only about half the time

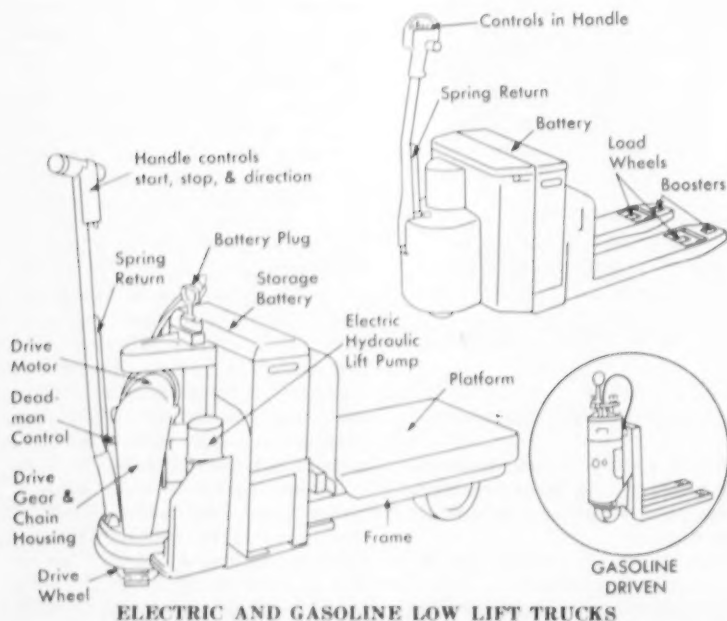
and none of the effort to elevate a powered machine as that needed to raise a foot-operated model.

Manufacturers of powered low-lift trucks make both platform and fork models and, wherever possible, use interchangeable parts in the two types. This practice simplifies maintenance problems for organizations that have both varieties of the same make.

THREE SOURCES OF POWER

Electric motors powered by storage batteries, gasoline engines and gasoline-electric units are used as sources of power for both types of low lifts.

The factors involved in selecting the source of power for a given job are covered later in this installment in connection with high-lift trucks.

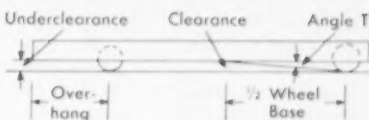
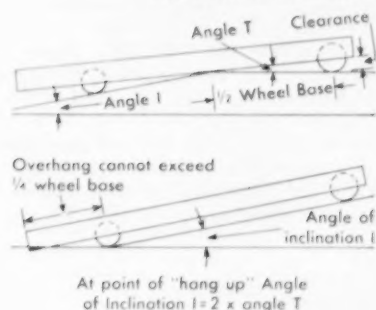


AN OVER-EMPHASIZED POINT

The overall length of low-lift trucks has been a point of particular emphasis during recent years. These machines frequently are used in tight quarters. Under such conditions the length of the truck is an important factor. However, in situations where they operate in the same areas as high-lift trucks, the latter, since they usually require more maneuvering space than the low-lift types, make the length of the low-lift truck used in the same area relatively less important.

CHECK UNDERCLEARANCES CAREFULLY

TROUBLES ENCOUNTERED WITH RAMPS



The amount of underclearance provided in trucks that must negotiate ramps is an important construction feature, especially in the case of those designed to handle pallets. These carriers hang below the surface of the forks and low clearance may cause trouble.

If there is any question about being able to clear the top of a ramp it is best to test the machine with a pallet of the size to be handled. If this is impractical, a scale model should be drawn of the ramp and a machine cut out, its dimensions drawn to the same scale.

STANDARD DIMENSIONS ARE FOLLOWED

Although there are structural variations in low-lift machines, the range of sizes offered the prospective user are somewhat standardized. Some of these have been indicated in the sketch shown in connection with fitting the skid or pallet to the equipment and vice versa. There now is practically universal acceptance of the size of wheels and the vertical thickness of arms so that the openings of pallets where the forks are inserted are uniform.

Capacities of these machines range from 4,000 to 6,000 lb. The lifting speeds for lighter loads usually is 6 sec., for heavier ones 9 sec. The lowering speed usually is 4 sec.

Running speeds for electrically powered machines usually are 3.5 mph with no load, to 3 mph with 4,000 lb, and 2.8 mph with 6,000 lb.

Either 12- or 18-volt batteries are optional with most models. Larger compartments are required with the more powerful batteries; but even these are standardized so that the user may select the make he desires.

The service weight of electric machines, including the battery, varies from 1,400 to 1,600 lb with different manufacturers.

The running gear for platform trucks usually consists of 10½x6 in. rubber cushion drive wheels and trailing wheels with the same diameter as the lowered height of

the platform.

Low-lift fork trucks have 10½x6 in. drive wheels and 3¼x6¼ in. steel wheels in the arms.

The above figures for wheels are representative of standard equipment, although there are variations, such as dual or tandem wheels. However, even in these cases, standards have been set so that the openings in the bottoms of pallets may be uniform.

Earlier in this installment brief mention was made of the factors influencing the selection of hand-operated low lifts. In choosing a powered machine one is not concerned with such matters as ease of lift or of maneuvering, because all these functions are performed by the machine itself. The most important considerations in selecting these machines is their reliability and ease of maintenance. Manufacturers of these machines have developed power units which can be quickly removed and replaced with a new one. If a spare is kept on hand, the time that any given machine will have to be laid up for mechanical repairs is kept to a minimum.

This does not mean, however, that regular maintenance can be neglected. Machines should be placed on an established schedule for inspection and lubrication. Electrical contacts must be kept bright and motor brushes given attention periodically. Manufacturers issue instructions for such maintenance.

WHERE LOW-LIFT TRUCKS ARE USED

Low-lift trucks are invaluable. They handle unit loads in warehouses, on shipping and loading platforms, on and off elevators, in and out of trucks, trailers and freight cars, and in the holds of ships.

Manually hauled skid equipment can be handled by one man with slightly heavier loads and over longer distances than can be handled by an individual using pallet equipment. This is because the wheels of the former have larger diameters than those of the latter—they start and roll more easily, however, the work cycle with hand equip-

ment should be intermittent to give the worker a chance to rest between trips. On the other hand, when the machine is fully powered, the operator can work almost continuously handling capacity loads over reasonably long distances without appreciable fatigue.

Low-lift trucks are the transporting elements of the unit load systems. High-lift machines are utilized most economically when they are kept busy tiering loads. It is the function of the low-lift varieties to do the heavy hauling assignments.

HIGH-LIFT SKID AND PALLET TRUCKS

The essential difference between high-lift trucks and the low-lift varieties is that, in addition to being able to pick up, transport and set down their loads, they have the advantage of being able to tier. Again, these functions all are performed without breaking bulk. They fall into three general types.

First are those which evolved from earlier stacking machines. Stability for their loads is secured by outriggers—supporting arms which extend out from the machine under the load and remain in contact with the floor when the load is elevated.

The second type is a hybrid. Built along stacker lines, it carries a counterbalanced load. It is a stacker con-

structed, cantilever truck.

Both kinds originally were operator-led. However, they have graduated from the walkie group, and provision has been made for the operator to ride on the truck.

The third group comprises the true fork trucks—cantilever machines with counterbalanced loads on which the operator rides, sitting or standing, according to the design.

All trucks comprising these groups are self-propelled. They are known by many different names and to avoid confusion we shall call the first group powered stackers; the second powered, counterbalanced stackers, and the third fork trucks.

STACKERS TURNED HIGH-LIFT TRUCKS

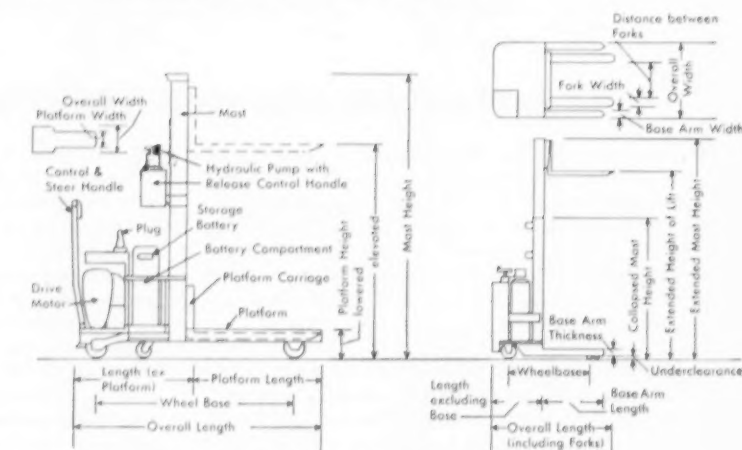
The mechanical features of stackers are covered in the portion of this text where they are treated as being machines of the elevating system of handling. Here we are concerned with mobile stackers—those that are self-propelled. These are either led by the operator or he is able to ride on the machine as it travels. They are part of the group known as powered industrial trucks.

The accompanying diagrams show the principal components of both platform and fork models, as well as their important dimensions.

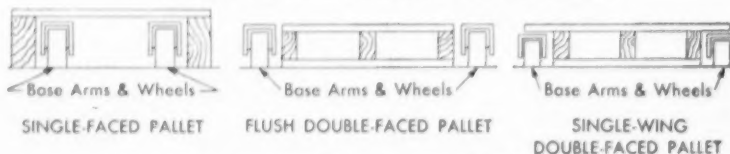
Models for handling skids have base arms which are set relatively close together so that they can run under skids or single-faced pallets. Widely spaced arms are required to straddle double-faced pallets.

There is nothing under a single-faced pallet or a skid to obstruct the stacker arms. The bottom deck boards of a double-faced pallet are obstacles to such an operation. The arms, frequently referred to as outriggers, must run outside of the pallet. For this reason these sometimes are called straddle trucks.

There are two ways to straddle a pallet. When the under sides of the top boards are higher than the outriggers of the truck, a semi-wing pallet can be utilized, with the wings extending over the outrigger arms. But, if these arms are higher than



POWERED PLATFORM AND FORK STACKERS



SUPPORT ARMS UNDER AND STRADDLING PALLET

the under surface of the top boards, there is nothing to do but straddle the entire pallet. This once was considered a space wasting practice. Experience has proved that there always is lost space in placing unitized loads, so that straddling outriggers do not sacrifice as much space as was

thought originally.

The height of outriggers is important. Some products (bagged goods, for example) overhang the edges of the pallets on which they are carried. If they droop down, they may be damaged by contact with high arms.

DETAILS OF POWERED STACKER CONSTRUCTION

The forks of trucks designed for handling single-faced pallets usually are recessed in the arms. This practice permits wider spacing of the forks than possible when they are mounted between the arms.

The carriages support the load carriers. They ride between two vertical channels called masts. Guide rollers at the upper and lower extremities of the carriages serve as bearings to take up the thrust exerted by the sus-

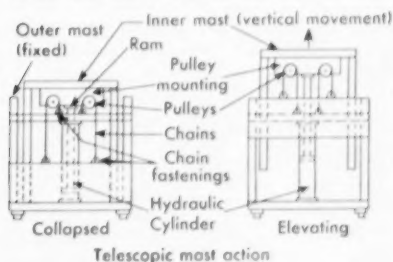
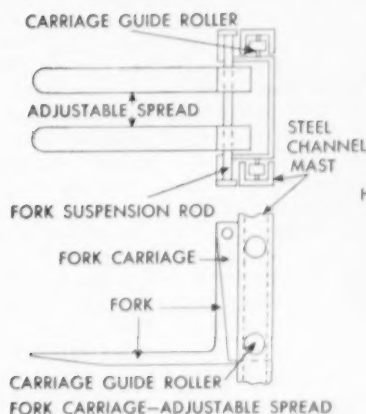
pended carriage against the inside, machined surfaces of the mast. They also reduce friction as the carriage moves up and down.

Platform-type carriers usually are mounted rigidly to the carriages. In contrast, forks are suspended from a rod to permit upward rotation. This provision is helpful in several handling operations. For example, after a machine operation has tiered a load, it is not always possible to

stop the downward movement of the forks before they strike the bottom boards of the pallet. A rigid set of forks would exert undue pressure on these boards and this

pressure would be transmitted to the articles on the top layer of the lower pallet, and they may be damaged. Forks free to swing upward prevent such a contingency.

MORE CONSTRUCTION DETAILS AND OPERATING DATA



TELESCOPIC MASTS

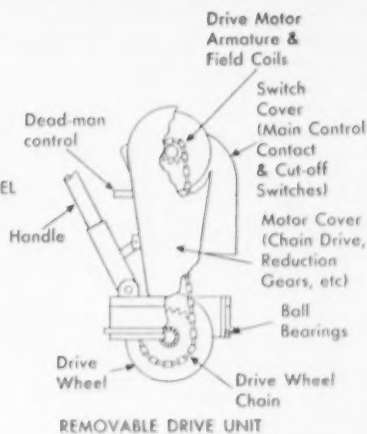
For the first seven years or so after their introduction, powered stackers had fixed masts. In 1944, during the course of installing palletized methods in a cold storage warehouse, it was found desirable to have a machine which could travel down the aisles under low-hanging refrigeration coils and also be able to double-tier unit loads. The first machine with a telescoping mast was developed to meet this need.

In masts so designed there are two components—an outer mast, which is fixed, and an inner mast, which slides up and down within the outer mast.

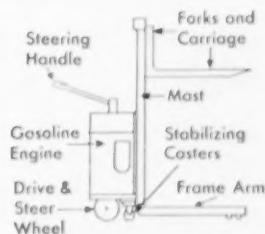
The carriage functions in the inner mast. Two sprockets or sheaves are mounted on the crosshead of the inner mast. Two roller chains or wire rope cables are fastened at one end to the frame of the truck, pass over the sprockets or sheaves, and their other ends are made fast to the carriage. As a hydraulic piston or other hoisting mechanism elevates the inner mast, the pulleys or sheaves rise and the carriage is elevated. The carriage moves at half the speed of the mast, but through twice the distance covered by the mast.

Practically all powered stacker manufacturers have developed drive units which include the drive motor, reduction gearing, drive wheel, brake and certain electrical control switches. This arrangement, as mentioned above, keeps down-time to a minimum if a spare is on hand for replacement.

Direction, speed, lifting and lowering usually are controlled by levers or buttons in the handle of the truck.



SOME CONSTRUCTION DETAILS AND A GASOLINE TRUCK



A GASOLINE POWERED STACKER

Some controls are effected by rotating the handles—others entirely by push buttons.

Most powered stackers are actuated by electric motors which draw their current from storage batteries. However, where conditions are such that gasoline engines or gas-electric units can be employed, such models are available.

OPERATING DATA

Where a manufacturer makes both types of machines, the drive-ends of both varieties are identical. The differences are in the carriages and the supporting arms. Operating data and critical dimensions of both varieties are the same except as they pertain to the variable features.

Typical specification for these trucks are: Maximum capacity 4,000 lb; mast height collapsed from 59 to 83 in., extended 97 to 145 in.; height of forks from 79 to 127 in.; service weight, including battery, 3,500 to 3,600 lb; lifting speeds 18 fpm without loads, 12 to 13 fpm with load; lowering speed 25 fpm; running speed 3.5 to 4.1 mph without load and 2.5 to 3.8 mph with load. Platforms vary from 18 to 26 in. wide and from 24 to 48 in. long. Forks range from 24 to 48 in. long, normally are 4 in. wide and 2 in. thick.

Manufacturers' specifications may indicate the minimum width of intersecting aisle in which the machine can operate, and also the minimum width of aisle from which the truck can load at 90 deg. These figures are calculated very closely and it is advisable to allow an extra 4 to 6 in. for ease in maneuvering.

POWERED COUNTERBALANCED STACKERS

These machines were developed from the regular powered types to eliminate the need for outriggers. They are made only in models which handle pallets. They can be equipped with telescopic and tilting masts.

Manufacturers who make the two types of stackers utilize the same driving units in both. However, the hydraulic mast-tilting mechanism, the large wheels under the mast, and the longer chassis are unique features of the counterbalanced models.

The amount of tilt usually is 10 deg backward and 2 deg forward. Backward tilting permits the commodities being carried to settle against a back rest and thus to be more stable during travel. Forward tilting is helpful in tiering. The op-

erator tilts the mast forward slightly as he is lowering the pallet in place and the front edge of the pallet settles first, thus freeing the forks at that end as the pallet continues to descend. Tilting also is useful in freight car operations involving ramps.

The mechanics of counterbalancing are illustrated in the diagram. With the front wheels acting as the fulcrum of the system, the moments of the load and the machine parts at the front end must be more than counterbalanced by the moments of the machine parts and battery at the rear end in order to secure stability. The weight of the operator never is taken into consideration in these calculations.

In arriving at the capacity of a given machine, the load is considered to be uniform as to density and its center of gravity is, therefore, at its mid-point—at the middle of the forks. Manufacturers issue tables showing the capacities of their machines expressed in terms of fork (load) lengths and sometimes in terms of load center. The curve showing the capacity at different load centers is not a straight line. This is because some weight at the front end (the forks and part of the machine itself) is practically constant.

Occasionally the capacity of a truck is expressed in inch-pounds. This figure is the weight of the load multiplied by the horizontal distance between the center of gravity of the load and the axle of the front wheels. When the inch-pound rating is used to derive the capacities of the machines with different lengths of load than the one for which the rating was developed, the resulting figures, if plotted, result in a straight line instead of a curve. The load center method of designating the capacities of fork trucks is more accurate.

Very few attachments, compared with the many varieties available for use with conventional fork trucks, have been developed for counterbalanced stackers. A search through trade catalogs discloses two—a scoop and a ram. There are some special carriages, such as those for handling dies. By and large, these machines are used almost exclusively for tiering.

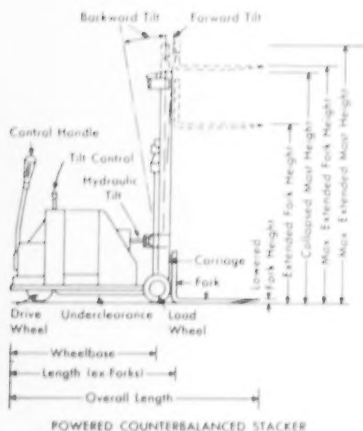
Because they require considerably more maneuvering space than non-counterbalanced stackers and are more limited in their load capacities than conventional fork trucks, the question is sometimes raised as to just where these machines fit in the handling picture.

Compared with outrigger types, the counterbalanced machines offer the advantages of tilting masts and the elimination of outriggers, which are sometimes troublesome where ramps and door sills are to be negotiated. On the other hand, they are somewhat less expensive than fork trucks of equal capacity.

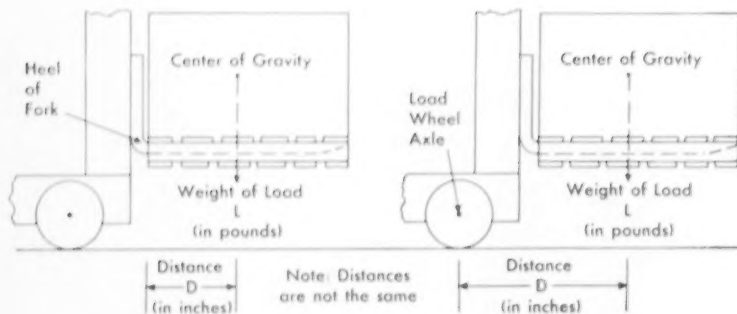
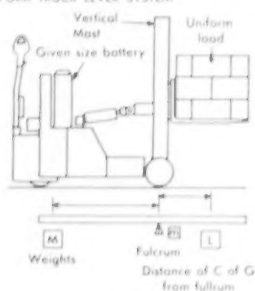
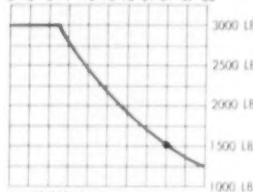
However, they are excellent where comparatively light loads are to be handled and there is ample maneuvering space. This is especially true if they are used in connection with powered low-lift trucks belonging to the same family.

(Please Turn to Page 95)

COUNTERBALANCED STACKERS PERFORMANCE CURVE AND LEVER SYSTEM



Center of Gravity of Load (ins) Load



TWO WAYS TO DESIGNATE LOAD CAPACITY

DA

INDUSTRIAL TRUCK SPECIFICATIONS—1956-57

INTEGRAL FRONT-END LOADERS (Shovel)

Line Number	MAKE AND MODEL	OVERALL DIMENSIONS										BUCKET					ENGINE				TRANSMISSION					Line Number								
		Type	Height, Highest Point, Level (In.)	WIDTH (In.)		LENGTH (In.)		Wheelbase (In.)	Track Length on Ground (In.)	Weight (Lb.) (No load, but incl. water, fuel, oil)	Capacity Heaped (Cu. Yd.)	Capacity Struck (Cu. Yd.)	Width (In.)	Lifting Capacity (Lb.)	Carrying Capacity (Lb.)	Max. Dumping Clearance (In.)	Hinge Pin under Angle of Dump at Max. Height (Deg.)	Raising Time (Sec.)	Lowering Time (Sec.)	Track—Width of Shoe (In.)	MAKE AND MODEL	Brake H.P.	Type of Fuel	Type	No. of Forward Speeds		No. of Reverse Speeds	Max. Forward Speed (Mph)	Max. Reverse Speed (Mph)	Clutch Type	Brake Type			
				Outside Rear	Outside Front	Bucket on Ground	Bucket at Carrying Position																											
1	Alco-Chalmers	HD-4G	69 1/2	78 1/2	78 1/2	181		63 1/2	19600	1 1/2	1 1/2	75			96	123	45		13	Own	HD344	57	D	Conv	4	4	5	4.1	4	J4	M	12650	1	
2		HD-11G	84 1/2	95 1/2	95 1/2	209		106 1/2	32000	2 1/2	2 1/2	95 1/2			114	139	52		16	Own	HD516	105	D	Conv	6	3	5	5.7	4.4	Fr	M	25165	2	
3		HD-21G	98 1/2	109 1/2	111	232		116 1/2	44400	3 1/2	3 1/2	111			117	147	45		20	Own	HD844	150	D	TC	3	2	7.2	5.5	Fr	M	60000	3		
4			98 1/2	109 1/2	111	235		129 1/2	66500	5 1/2	5 1/2	111			126	163	45		22	Own	HD5-844	234	D	TC	2	1	6.4	3.5	Fr	M	85000	4		
5	American	200	63 1/2	58	58	145	156		54	6670			54			98	60	60	3.0	10	Cont	F-140	38.5	G	Conv	3	1	4.5	2.0	Fr	M	5170	5	
6		300	63 1/2	59	59	148	156		54	8025			62 1/2			98	60	60	3.0	11	Cont	F-182	42.5	G	Conv	3	1	4.5	2.0	Fr	M	5980	6	
7		400	63 1/2	60	60	153	162		57	8130			62 1/2			106	60	60	3.0	12	Cont	GD-157	38	G	Conv	3	1	4.5	2.0	FC	M	5300	7	
8		400D	63 1/2	60	60	153	162		57	8320			62 1/2			106	60	60	3.0	12	Cont	GD-157	38	G	Conv	3	1	4.5	2.2	FC	M	11200	8	
9		500	63 1/2	61	61	153	162		57	8550			62 1/2			106	60	60	3.0	13	Cont	FA-182	57	G	Conv	3	1	4.9	2.2	FC	M	11200	9	
10		600	63 1/2	61	61	153	162		57	10750			62 1/2			106	60	60	3.0	13	Cont	GD-187S	45	D	Conv	3	1	4.9	2.2	FC	M	11200	10	
11		800	65	63	63	165	174		62 1/2	10986	1		65			110	60	60	3.0	14	Cont	F-209	62	D	Aut	4	4	7.0	7.7	Fr	M	13860	11	
12		800D	65	63	63	165	174		62 1/2	11065	1		65			110	60	60	3.0	14	Cont	ED 258	62	D	Aut	4	4	7.0	7.7	Fr	M	13860	12	
13	Caterpillar	933	75 1/2	70	70	166		54	73 1/2	15600	1 1/2		70	5400	5600	94 1/2	118 1/2	50	7.0	2.0	12	Own		50	D	Conv	4	2	6.0	3.0	Fr	M	9610	13
14		955	82 1/2	80	80	181 1/2		67	83	21480	1 1/2		80	8000	8000	99 1/2	128	50	7.0	2.0	15	Own		70	D	Conv	4	2	6.9	3.0	Fr	M	12660	14
15		977	87 1/2	86	86	204 1/2		74	103 1/2	31795	2 1/2		86	9600	12300	111 1/2	141 1/2	50	9.7	3.0	18	Own		100	D	Conv	5	4	7.4	7.0	Fr	M	16180	15
16	Clark	125B	61	42 1/2	46 1/2	128	127	51	N	6250		1 1/2	50	3000	1500	80	79	48	7.9	3.9	N	Wau 180-GLR	44	G	PS	2	1	11.2	10.5	TC	M	2000	16	
17		75R	61	42 1/2	46 1/2	128	127	51	N	11350	1 1/2	1 1/2	50	3000	1500	80	79	48	7.9	3.9	N	Wau 180-GLR	44	G	PS	2	1	11.2	10.5	TC	M	2000	17	
18		75R	61	42 1/2	46 1/2	128	127	51	N	11350	1 1/2	1 1/2	50	3000	1500	80	79	48	7.9	3.9	N	Wau 180-GLR	44	G	PS	2	1	11.2	10.5	TC	M	2000	18	
19		75A	61	42 1/2	46 1/2	128	127	51	N	12100	1 1/2	1 1/2	50	3000	1500	80	79	48	7.9	3.9	N	Wau 180-GLR	44	G	PS	2	1	11.2	10.5	TC	M	2000	19	
20		125A	61	42 1/2	46 1/2	128	127	51	N	12550	1 1/2	1 1/2	50	3000	1500	80	79	48	7.9	3.9	N	Wau 180-GLR	44	G	PS	2	1	11.2	10.5	TC	M	2000	20	
21		125A	61	42 1/2	46 1/2	128	127	51	N	12550	1 1/2	1 1/2	50	3000	1500	80	79	48	7.9	3.9	N	Wau 180-GLR	44	G	PS	2	1	11.2	10.5	TC	M	2000	21	
22	Hough	MA	58	44	50	123	122	48	N	5050	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	22
23		MAD	58	44	50	123	122	48	N	5285	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	23
24		MAD	58	44	50	123	122	48	N	5285	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	24
25		MAD	58	44	50	123	122	48	N	5285	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	25
26		MAD	58	44	50	123	122	48	N	5285	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	26
27		MAD	58	44	50	123	122	48	N	5285	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	27
28		MAD	58	44	50	123	122	48	N	5285	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	28
29		MAD	58	44	50	123	122	48	N	5285	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	29
30		MAD	58	44	50	123	122	48	N	5285	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	30
31		MAD	58	44	50	123	122	48	N	5285	1 1/2	1 1/2	48	3200	2000	62 1/2	78	40	6.3	5.5	N	Wau 180-DLC	FC	33	G	Aut	2	2	8.3	10.2	Fr	M	18000	31
32	Tractomotive	TL-6	64	45	53	115	121	48	N	6000	1 1/2	1 1/2	52	3200	2000	62 1/2	78	40	6.3	5.5	N	AC	B-125	33.7	G	CI	4	4	18.0	20.0	TC	M	2000	32
33		TL-10	74	56	73 1/2	163	168	72	N	11700*	1 1/2	1 1/2	75 1/2			96	120	42	7.0	5.0	N	AC	W-226	63	G	CI	4	4	18.0	20.0	TC	M	2000	33
34		TL-10	74	56	73 1/2	163	168	72	N	11700*	1 1/2	1 1/2	75 1/2			96	120	42	7.0	5.0	N	AC	W-226	63	G	CI	4	4	18.0	20.0	TC	M	2000	34
35		TL-11D	75 1/2	58	77 1/2	177	184	84	N	12720*	1 1/2	1 1/2	75 1/2			97	123	42	7.0	6.0	N	AC	6DA-273	77	D	CI	4	4	20.0	25.0	TC	M	2000	35
36		TL-12	75 1/2	58	77 1/2	177	184	84	N	12720*	1 1/2	1 1/2	75 1/2			97	123	42	7.0	6.0	N	AC	6DA-273	77	D	CI	4	4	20.0	25.0	TC	M	2000	36
37		TL-120	75 1/2	58	77 1/2	177	185	81	N	12720*	1 1/2	1 1/2	75 1/2			96	121	45	7.0	6.0	N	AC	6DA-273	77	D	CI	4	4	20.0	25.0	TC	M	2000	37

ABBREVIATIONS

* Weight includes liquid filled tires which are not standard equipment.

AC—Automatic

Aut—Automatic

CI—Cylindrical

Conv—Convex

Cr—Crawler

D—Diesel

FC—Friction clutch in combination with torque converter.

Fr—Friction

G—Gasoline

H—Hydraulic

M—Mechanical

N—No or none

Cl—Clutch type

Cont—Continental

Conv—Convex

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED HIGH-LIFT FORK

Due to space limitations basic models only are presented for each of the companies represented. A multitude of

Line Number	MAKE AND MODEL		MAXIMUM CAPACITY	Lift Center (In.)	Service Weight (lb.) Excluding Battery	Operator Sits, Stands, Walks	Lift - Fork or Platform	Lifting Power	MAST				OVERALL DIMENSIONS												Overall Including Carriage or Backspread	
									Telescopic	Tilt		Face of Forks to Centerline of Front Axle	Load Center (In.)	Less Forks	Length		Height									
										Rearward (Deg.)	Forward (Deg.)				Wheelbase (In.)	Minimum	Maximum	At Truck Center	Under-clearance At Mast	Mast Collapsed		Mast Extended		Lifting		
																				Minimum	Maximum	Minimum	Maximum	Minimum		Maximum
1	Alfie-Chalmers (Buda)	**FB20-15	2000	15	3750	S	Fk	Hvd	Y	10	5	38	11 1/2	15	62 1/2	33	7	3	24*	53	113	64 1/2	193 1/2	42	168	
2		**FB20-18	2000	15	3870	S	Fk	Hvd	Y	10	5	38	11 1/2	15	66 1/2	33	8 1/2	3	24*	53	113	64 1/2	193 1/2	42	168	
3		**FB20-24	2000	15	4180	S	Fk	Hvd	Y	10	5	38	11 1/2	24	62 1/2	33	7	3	21*	51	113	64 1/2	193 1/2	42	168	
4		**FB20-24	2000	15	4150	S	Fk	Hvd	Y	10	5	38	13 1/2	24	66 1/2	33	8 1/2	3	24*	51	113	64 1/2	193 1/2	42	168	
5		**FT30-15	3000	15	4980	S	Fk	Hvd	Y	10	5	40	12 1/2	15	74 1/2	33	5 1/2	3	24*	53	113	88 1/2	194 1/2	42	168	
6		**FT30-15	3000	15	5070	S	Fk	Hvd	Y	10	5	40	12 1/2	15	74 1/2	33	5 1/2	3	24*	50	113	88 1/2	194 1/2	42	168	
7		**FT30-24	3000	24	5725	S	Fk	Hvd	Y	10	5	40	12 1/2	24	76 1/2	36	5 1/2	3	24*	50	113	88 1/2	194 1/2	42	168	
8		**FT30-24	3000	24	5825	S	Fk	Hvd	Y	10	5	40	12 1/2	24	76 1/2	36	5 1/2	3	24*	50	113	88 1/2	194 1/2	42	168	
9		**FT30-24	3000	24	6375	S	Fk	Hvd	Y	10	5	40	17 1/2	24	88	36	8	6	24	53	113	88 1/2	194 1/2	42	168	
10		**FTD30-24	3000	24	6475	S	Fk	Hvd	Y	10	5	40	17 1/2	24	88	36	8	6	24	53	113	88 1/2	194 1/2	42	168	
11		**FT40-18	4000	24	6210	S	Fk	Hvd	Y	10	5	40	12 1/2	18	76 1/2	36	5 1/2	3	24*	53	113	88 1/2	194 1/2	42	168	
12		**FTD40-18	4000	24	6310	S	Fk	Hvd	Y	10	5	40	12 1/2	18	76 1/2	36	5 1/2	3	24*	50	113	88 1/2	194 1/2	42	168	
13		**FT40-24	4000	24	6380	S	Fk	Hvd	Y	10	5	45	12 1/2	24	81 1/2	36	5 1/2	3	24*	51	113	88 1/2	194 1/2	42	168	
14		**FTD40-24	4000	24	6480	S	Fk	Hvd	Y	10	5	45	12 1/2	24	81 1/2	36	5 1/2	3	24*	50	113	88 1/2	194 1/2	42	168	
15		**FT40-24	4000	24	7275	S	Fk	Hvd	Y	10	5	49	12 1/2	24	91	36	8	6	24	50	113	88 1/2	194 1/2	42	168	
16		**FTD40-24	4000	24	7375	S	Fk	Hvd	Y	10	5	49	12 1/2	24	91	36	8	6	24	50	113	88 1/2	194 1/2	42	168	
17		**FT50-24	5000	24	7175	S	Fk	Hvd	Y	10	5	45	17 1/2	24	94	36	5 1/2	3	24	50	113	88 1/2	194 1/2	42	168	
18		**FTD50-24	5000	24	7275	S	Fk	Hvd	Y	10	5	45	17 1/2	24	94	36	5 1/2	3	24	50	113	88 1/2	194 1/2	42	168	
19		**FT50-24	5000	24	7840	S	Fk	Hvd	Y	10	5	50	14 1/2	24	88	36	6 1/2	3	16 1/2	50	113	74 1/2	200 1/2	42	168	
20		**FTD50-24	5000	24	7940	S	Fk	Hvd	Y	10	5	50	14 1/2	24	88	36	6 1/2	3	16 1/2	50	113	74 1/2	200 1/2	42	168	
21		**FT60-24	6000	24	9025	S	Fk	Hvd	Y	10	5	55	14 1/2	24	93	42	6 1/2	3	16 1/2	50	113	74 1/2	200 1/2	42	168	
22		**FTD60-24	6000	24	9125	S	Fk	Hvd	Y	10	5	55	14 1/2	24	93	42	6 1/2	3	16 1/2	50	113	74 1/2	200 1/2	42	168	
23		**Dual FT60-24	6000	24	10400	S	Fk	Hvd	Y	10	5	55	23	24	104 1/2	42	9	6	16 1/2	50	113	74 1/2	200 1/2	42	168	
24		**Dual FTD60-24	6000	24	10500	S	Fk	Hvd	Y	10	5	55	23	24	104 1/2	42	9	6	16 1/2	50	113	74 1/2	200 1/2	42	168	
25		**FT70-24	7000	24	9800	S	Fk	Hvd	Y	10	5	55	14 1/2	24	93	42	6 1/2	3	16 1/2	50	113	74 1/2	200 1/2	42	168	
26		**FTD70-24	7000	24	9800	S	Fk	Hvd	Y	10	5	55	14 1/2	24	93	42	6 1/2	3	16 1/2	50	113	74 1/2	200 1/2	42	168	
27		**FT80-24	8000	24		S	Fk	Hvd	Y	10	5	60	14 1/2	24	100 1/2	42	6 1/2	3	8 1/2	50	113	74 1/2	200 1/2	42	168	
28		**FTD80-24	8000	24		S	Fk	Hvd	Y	10	5	60	14 1/2	24	100 1/2	42	6 1/2	3	8 1/2	50	113	74 1/2	200 1/2	42	168	
29	Automatic	**FFE-10	1000	15	2560	St	Fk	Hvd	Y	10	5	35 1/2	10	24 1/2	53	38 1/2	4	2 1/2	55	68 1/2	107 1/2			107 1/2	120 1/2	
30		**FFE-15	1500	15	3160	St	Fk	Hvd	Y	10	5	35 1/2	10 1/2	24 1/2	53 1/2	38 1/2	4	2 1/2	55	68 1/2	107 1/2			107 1/2	120 1/2	
31		**FFE-20	2000	15	3820	St	Fk	Hvd	Y	10	5	35 1/2	10 1/2	24 1/2	53 1/2	38 1/2	4	2 1/2	55	68 1/2	107 1/2			107 1/2	120 1/2	
32		**FFE-30	3000	24	4350*	St	Fk	Hvd	Y	10	5	41 1/2	11 1/2	24 1/2	111 1/2	38 1/2	4	2 1/2	52	68 1/2	118 1/2			118 1/2	118 1/2	
33		**Shipper BF-15	1500	16	4395*	S	Fk	Hvd	Y	10	5	39	13 1/2	18 1/2	58 1/2	30 1/2	5	3	58	68 1/2	118 1/2			118 1/2	144	
34		**BF-15	1500	16	4900*	S	Fk	Hvd	Y	10	5	39	13 1/2	18 1/2	58 1/2	30 1/2	5	3	58	68 1/2	118 1/2			118 1/2	144	
35		**Shipper BF-20	2000	16	5100*	S	Fk	Hvd	Y	10	5	39	13 1/2	24 1/2	61 1/2	30 1/2	5	3	68	83 1/2	147 1/2			132 1/2	168	
36		**BF-20	2000	16	5669*	S	Fk	Hvd	Y	10	5	39	13 1/2	24 1/2	61 1/2	30 1/2	5	3	68	83 1/2	147 1/2			132 1/2	168	
37		**BF-30	3000	24	6398*	S	Fk	Hvd	Y	10	5	48	14	24 1/2	74 1/2	36 1/2	5	3	68	83 1/2	147 1/2			132 1/2	168	
38		**BF-40	4000	24	7378*	S	Fk	Hvd	Y	10	5	48	14	24 1/2	78 1/2	38 1/2	5	3	68	83 1/2	147 1/2			132 1/2	168	
39		**BF-40AE	4000	24	7280*	St	Fk	Hvd	Y	10	5	43	14	18 1/2	82 1/2	38 1/2	5	3	68	83 1/2	147 1/2			132 1/2	168	
40		**CF-10	1000	16	4450*	S	Fk	Hvd	Y	10	3	42	12 1/2	24 1/2	64 1/2	38 1/2	4 1/2	2 1/2	68	83 1/2	147 1/2			132 1/2	162	
41		**CF-15	1500	16	4450*	S	Fk	Hvd	Y	10	3	42	12 1/2	24 1/2	64 1/2	38 1/2	4 1/2	2 1/2	68	83 1/2	147 1/2			132 1/2	162	
42		**CF-20	2000	16	4760*	S	Fk	Hvd	Y	10	3	42	12 1/2	24 1/2	65 1/2	38 1/2	4 1/2	2 1/2	68	83 1/2	147 1/2			132 1/2	162	
43		**CF-30	3000	24	5475*	S	Fk	Hvd	Y	10	3	42	12 1/2	24 1/2	69 1/2	38 1/2	4 1/2	2 1/2	68	83 1/2	147 1/2			132 1/2	162	
44		**CF-40	4000	24	5490*	S	Fk	Hvd	Y	10	3	42	12 1/2	15 1/2	69 1/2	36 1/2	4 1/2	2 1/2	68	83 1/2	147 1/2			132 1/2	162	
45		**CLA	800	15	1540	W	Fk	N	10	5	35	5 1/2	18 1/2	49 1/2	38 1/2	2 1/2	1 1/2	69	83 1/2	83 1/2			89 1/2	93		
46		**CLB	1000	15	1570	W	Fk	N	10	5	35	5 1/2	18 1/2	49 1/2	38 1/2	2 1/2	1 1/2	69	83 1/2	83 1/2			89 1/2	93		
47		**CLTA	850	15	1780	W	Fk	N	10	5	35	5 1/2	18 1/2	49 1/2	38 1/2	2 1/2	1 1/2	68 1/2	83 1/2	150 1/2			136 1/2	160		
48		**CLTB	810	15	1820	W	Fk	N	10	5	35	5 1/2	18 1/2	49 1/2	38 1/2	2 1/2	1 1/2	68 1/2	83 1/2	150 1/2			136 1/2	160		
49		**ESRT-20	2000	15	3200	St	Fk	Hvd	Y	10	5	55 1/2	30 1/2	24 1/2	67 1/2	38 1/2	2 1/2	1 1/2	23	83 1/2	148 1/2			130 1/2	150 1/2	
50		**ESRT-40	4000	24		St	Fk	Hvd	Y	N	N	62	30 1/2	24 1/2	74 1/2	42 1/2	2 1/2	1 1/2	23	83 1/2	148 1/2			132 1/2	150 1/2	
51		**ESST-20	2000	15		St	Fk	Hvd	Y	N	N	50	24 1/2	24 1/2	42 1/2	2 1/2	2 1/2	68 1/2	83 1/2	146 1/2			130 1/2	130 1/2		
52		**ESST-30	3000	24		St	Fk	Hvd	Y	N	N	50	24 1/2	24 1/2	42 1/2	2 1/2	2 1/2	68 1/2	83 1/2	146 1/2			130 1/2	130 1/2		
53		**ESST-40	4000	24		St	Fk	Hvd	Y	N	N	50	24 1/2	24 1/2	42 1/2	2 1/2	2 1/2	68 1/2	83 1/2	1						

OR PLATFORM TRUCKS

variations, to fit the needs of the individual user, are available from any of the manufacturers listed.

TURNING RADIUS (in.) With 40"x48" Pallet				ENGINE OR MOTOR		BATTERY		TRANSMISSION			SPEEDS With Capacity Load				TIRE SIZES		TOWING				
Outside (Following)	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Slacking	Make and Model	Horsepower	Normal Voltage	Ampere Hours	Conventional or Automatic	No. of Forward Speeds	No. of Reverse Speeds	Clutch Type	Truck				Dead Man Brake	Drive Wheels	Steering Wheels	Provision for	Max. Drawbar Pull	Line Number
												Forward (mph)	Reverse (mph)	Hoisting (fpm)	Lowering (fpm)						
62 ¹ / ₂	10 ¹ / ₂	53 ¹ / ₂	122 ¹ / ₂	Wau. ICK-135-B	18			Conv	2	2	Fr	5.8	5.8	44	N			Y		1	
69 ¹ / ₂	16 ¹ / ₂	56 ¹ / ₂	130 ¹ / ₂	Wau. ICK-135-B	18			Conv	2	2	Fr	7.0	7.0	44	N	6.00-9	5.00-8	Y		2	
62 ¹ / ₂	10 ¹ / ₂	53 ¹ / ₂	122 ¹ / ₂	Wau. ICK-135-B	18			Conv	2	2	Fr	5.8	5.8	44	N			Y		3	
69 ¹ / ₂	16 ¹ / ₂	56 ¹ / ₂	130 ¹ / ₂	Wau. ICK-135-B	18			Conv	2	2	Fr	7.0	7.0	44	N	6.00-9	5.00-8	Y		4	
70	7	61	82 ¹ / ₂	Buda 48D-153	49			Conv	2	2	Fr	6.6	6.6	45	N			Y		5	
70	7	61	82 ¹ / ₂	Buda 48D-153	49			Conv	2	2	Fr	6.6	6.6	45	N			Y		6	
72	7	63 ¹ / ₂	84 ¹ / ₂	Buda 48D-153	49			Conv	2	2	Fr	6.6	6.6	45	N			Y		7	
72	7	63 ¹ / ₂	84 ¹ / ₂	Buda 48D-153	49 ¹ / ₂			Conv	2	2	Fr	6.6	6.6	45	N			Y		8	
86	15 ¹ / ₂	72	103 ¹ / ₂	Buda 48D-153	49			Conv	2	2	Fr	10.0	10.0	45	N	7.00-12	6.50-10	Y		9	
86	15 ¹ / ₂	72	103 ¹ / ₂	Buda 48D-153	49 ¹ / ₂			Conv	2	2	Fr	10.0	10.0	45	N	7.00-12	6.50-10	Y		10	
72	7	63 ¹ / ₂	84 ¹ / ₂	Buda 48D-153	49			Conv	2	2	Fr	6.6	6.6	45	N			Y		11	
72	7	63 ¹ / ₂	84 ¹ / ₂	Buda 48D-153	49 ¹ / ₂			Conv	2	2	Fr	6.6	6.6	45	N			Y		12	
77 ¹ / ₂	8 ¹ / ₂	65 ¹ / ₂	89 ¹ / ₂	Buda 48D-153	49			Conv	2	2	Fr	6.6	6.6	45	N			Y		13	
77 ¹ / ₂	8 ¹ / ₂	65 ¹ / ₂	89 ¹ / ₂	Buda 48D-153	49 ¹ / ₂			Conv	2	2	Fr	6.6	6.6	45	N			Y		14	
86	15 ¹ / ₂	72	103 ¹ / ₂	Buda 48D-153	49			Conv	2	2	Fr	6.6	6.6	45	N	7.00-12	6.50-10	Y		15	
86	15 ¹ / ₂	72	103 ¹ / ₂	Buda 48D-153	49 ¹ / ₂			Conv	2	2	Fr	6.6	6.6	45	N	7.00-12	6.50-10	Y		16	
79 ¹ / ₂	8	67	92	Buda 48D-153	49			Conv	2	2	Fr	6.6	6.6	45	N	18x8x12 ¹ / ₂	16 ¹ / ₂ x8x11 ¹ / ₂	Y		17	
79 ¹ / ₂	8	67	92	Buda 48D-153	49 ¹ / ₂			Conv	2	2	Fr	6.6	6.6	45	N	18x8x12 ¹ / ₂	16 ¹ / ₂ x8x11 ¹ / ₂	Y		18	
82 ¹ / ₂	7 ¹ / ₂	71	96 ¹ / ₂	Buda 48D-153	49			Conv	2	2	Fr	6.6	6.6	45	N			Y		19	
82 ¹ / ₂	7 ¹ / ₂	71	96 ¹ / ₂	Buda 48D-153	49 ¹ / ₂			Conv	2	2	Fr	6.6	6.6	45	N			Y		20	
88	9 ¹ / ₂	74 ¹ / ₂	102 ¹ / ₂	Buda 68D-230	78			Conv	2	2	Fr	6.8	6.8	45	N			Y		21	
88	9 ¹ / ₂	74 ¹ / ₂	102 ¹ / ₂	Buda 68D-230	80			Conv	2	2	Fr	6.8	6.8	45	N			Y		22	
111	20	91	131	Buda 68D-230	78			Conv	2	2	Fr	6.8	6.8	45	N			Y		23	
111	20	91	131	Buda 68D-230	80			Conv	2	2	Fr	6.8	6.8	45	N			Y		24	
88	9 ¹ / ₂	75 ¹ / ₂	152 ¹ / ₂	Buda 48D-153	78			Conv	2	2	Fr	6.8	6.8	45	N	22x9x16	16 ¹ / ₂ x8x11 ¹ / ₂	Y		25	
88	9 ¹ / ₂	75 ¹ / ₂	152 ¹ / ₂	Buda 48D-153	80			Conv	2	2	Fr	6.8	6.8	45	N	22x9x16	16 ¹ / ₂ x8x11 ¹ / ₂	Y		26	
96	13 ¹ / ₂	77 ¹ / ₂	111	Buda 68D-230	78			Conv	2	2	Fr	8.5	9.0	45	N			Y		27	
96	13 ¹ / ₂	77 ¹ / ₂	111	Buda 68D-230	80			Conv	2	2	Fr	8.5	9.0	45	N			Y		28	
55	2 ¹ / ₂	54	102	Auto-Lite	1 ¹ / ₂	24			3	3		4.5	4.5	50	FV	Y	16 ¹ / ₂ x6	10 ¹ / ₂ x5	Opt		29
55	2 ¹ / ₂	54	102	Auto-Lite	1 ¹ / ₂	24			3	3		4.5	4.5	50	FV	Y	16 ¹ / ₂ x6	10 ¹ / ₂ x5	Opt		30
55	2 ¹ / ₂	54	102	Auto-Lite	1 ¹ / ₂	24			3	3		4.5	4.5	50	FV	Y	16 ¹ / ₂ x6	10 ¹ / ₂ x5	Opt		31
61	2 ¹ / ₂	58	108 ¹ / ₂	Own		24			3	3	N	4.3	4.3	26	FV	Y	16 ¹ / ₂ x7	10 ¹ / ₂ x5	Opt		32
56 ¹ / ₂	2 ¹ / ₂	54 ¹ / ₂	100 ¹ / ₂	Own		24		N	4	4	N	5.0	5.0	20	FV	Y	20x5	10x5	Opt		33
56 ¹ / ₂	2 ¹ / ₂	54 ¹ / ₂	100 ¹ / ₂	Own	32			N	4	4	N	5.0	5.0	19	FV	Y	20x5	10x5	Opt		34
57 ¹ / ₂	2 ¹ / ₂	57 ¹ / ₂	107 ¹ / ₂	Own	24			N	4	4	N	5.0	5.0	19	FV	Y	20x5	10x5	Opt		35
67 ¹ / ₂	6 ¹ / ₂	60 ¹ / ₂	117 ¹ / ₂	Own	32			N	4	4	N	6.0	6.0	39	FV	Y	20x5	15x5	Opt		36
68 ¹ / ₂	5 ¹ / ₂	61 ¹ / ₂	119 ¹ / ₂	Own	32			N	4	4	N	4.6	4.6	26	FV	Y	20x6	15x5	Opt		37
71 ¹ / ₂	4 ¹ / ₂	64 ¹ / ₂	121 ¹ / ₂	Own	32			N	4	4	N	5.5	5.5	22	FV	Y	20x7	15x5	Opt		38
72 ¹ / ₂	2 ¹ / ₂	66 ¹ / ₂	122 ¹ / ₂	Own	30			N	3	3	N	5.2	5.2	18	FV	Y	20x7	15x5	Opt		39
62 ¹ / ₂	0 ¹ / ₂	58 ¹ / ₂	110 ¹ / ₂	Own	32			N	4	4	N	6.4	6.4	37	45	Y	17x5	12x3 ¹ / ₂	Opt		40
62 ¹ / ₂	0 ¹ / ₂	58 ¹ / ₂	110 ¹ / ₂	Own	32			N	4	4	N	6.4	6.4	36	45	Y	17x5	12x3 ¹ / ₂	Opt		41
62 ¹ / ₂	0 ¹ / ₂	58 ¹ / ₂	110 ¹ / ₂	Own	32			N	4	4	N	6.3	6.3	35	45	Y	17x5	12x3 ¹ / ₂	Opt		42
85 ¹ / ₂	0 ¹ / ₂	62 ¹ / ₂	114 ¹ / ₂	Own	32			N	4	4	N	5.6	5.6	33	45	Y	17x6	12x4 ¹ / ₂	Opt		43
85 ¹ / ₂	0 ¹ / ₂	62 ¹ / ₂	114 ¹ / ₂	Own	32			N	4	4	N	5.3	5.3	27	45	Y	17x7	12x4 ¹ / ₂	Opt		44
				Auto-Lite	1 ¹ / ₂	12		N	2	2	N				Y	10x5	9x5	N		45	
				Auto-Lite	1 ¹ / ₂	12		N	2	2	N				Y	10x5	9x5	N		46	
				Auto-Lite	1 ¹ / ₂	12		N	2	2	N				Y	10x5	9x5	N		47	
				Auto-Lite	1 ¹ / ₂	12		N	2	2	N				Y	10x5	9x5	N		48	
				Auto-Lite	1 ¹ / ₂	12		N	3	3	N	3.5	3.5	22	FV	Y	10x4	6 ¹ / ₂ x4 ¹ / ₂	N		49
				Auto-Lite	1 ¹ / ₂	12		N	3	3	N				FV	Y	10x4	6 ¹ / ₂ x4 ¹ / ₂	N		50
				Auto-Lite	1 ¹ / ₂	12		N	3	3	N				FV	Y	10x4	4 ¹ / ₂ x2 ¹ / ₂	N		51
				Auto-Lite	1 ¹ / ₂	12		N	3	3	N				FV	Y	10x4	4 ¹ / ₂ x2 ¹ / ₂	N		52
50 ¹ / ₂	0 ¹ / ₂	52 ¹ / ₂	91 ¹ / ₂	Auto-Lite	1 ¹ / ₂	24		N	3	3	N	5.8	5.8	35	FV	Y	17x6	16x3 ¹ / ₂	Opt		53
50 ¹ / ₂	0 ¹ / ₂	52 ¹ / ₂	91 ¹ / ₂	Auto-Lite	1 ¹ / ₂	24		N	3	3	N	5.5	5.5	30	FV	Y	17x6	16x4	Opt		54
75 ¹ / ₂	0 ¹ / ₂	67 ¹ / ₂	126 ¹ / ₂	Cont. F-162	38			Ele	Inf	Inf	N	8.0	8.0	40	80	N	22x7	16 ¹ / ₂ x8	Opt		55
75 ¹ / ₂	0 ¹ / ₂	67 ¹ / ₂	126 ¹ / ₂	Cont. F-162	38			Ele	Inf	Inf	N	8.0	8.0	40	80	N	22x8	16 ¹ / ₂ x8	Opt		56
80 ¹ / ₂	0 ¹ / ₂	73 ¹ / ₂	137 ¹ / ₂	Cont. F-162	38			Ele	Inf	Inf	N	8.0	8.0	40	80	N	22x9	16 ¹ / ₂ x7	Opt		57
				Cont. F-162	38			1													

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED HIGH-LIFT FORK

Line Number	MAKE AND MODEL	MAXIMUM CAPACITY	Load Center (in.)	Service Weight (lb.) - Excluding Battery	Operator - Sits, Stands, Walks	Lift - Fork or Platform	MAST										OVERALL DIMENSIONS									
							Lifting Power	Telescopic	Tilt		Wheelbase (in.)	Face of Forks to Centerline of Front Axle	Lead Center (in.)	Length		Height		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Overall - Including Carriage or Backguard		
									Rearward (Deg.)	Forward (Deg.)				Less Forks	Fork	Under-clearance	Mast Collapsed								Mast Extended	Lifting
1	Automatic (cont.)	**LFS-50	5000	24	9330*	S	Fk	Hyd	Y	10	5	53	14%	24	82%	38	4 1/2	3	64	83	143	124	160	160		
2		**LFS-60	6000	24	10200*	S	Fk	Hyd	Y	10	5	55	17%	24	84%	42	4 1/2	3	64	83	143	124	160	160		
3		**LFS-70	7000	24	11200*	S	Fk	Hyd	Y	10	5	55	17%	24	90%	42	5 1/2	3	61	83	137	115	151	151		
4		**LFS-80	8000	24	12075*	S	Fk	Hyd	Y	10	5	55	17%	24	92%	42	5 1/2	3	61	83	137	110	146	146		
5		**LFS-90	9000	24	13400*	S	Fk	Hyd	Y	10	5	60	17%	24	95%	42	5 1/2	3	58	83	134	110	146	146		
6		**LFS-100	10000	24	14000*	S	Fk	Hyd	Y	10	5	60	17%	24	95%	42	5 1/2	3	58	83	134	110	146	146		
7		**RTT	2000	15	4000*	S	Fk	Hyd	Y	10	5	39 1/2	11%	24	60%	38	4 1/2	2	67	83	147	67	103	103		
8		**SCL	2000	15	2780	W	Fk	Hyd	N	18	3	45	7%	24	64%	38	4	2	67	83	131	67	103	103		
9		**SCLT	2500	24	3280	W	Fk	Hyd	N	18	3	45	7%	24	64%	38	4	2	67	83	131	67	103	103		
10		**SCLTH	2500	24	3015	W	Fk	Hyd	N	18	3	45	7%	24	64%	38	4	2	67	83	131	67	103	103		
11		**SCLTH	2500	24	3495	W	Fk	Hyd	N	18	3	45	7%	24	67%	38	4	2	67	83	131	67	103	103		
12		**ISO	4000	24	2200	W	Plf	Hyd	N	N	N	54	18	18	38	1	1 1/2	1 1/2	83	83	128	70	101	101		
13		**ISO	4000	24	2800	W	Plf	Hyd	N	N	N	55	18	18	38	1	1 1/2	1 1/2	83	83	128	70	101	101		
14		**SPH-4	4000	24	1900	W	Plf	Hyd	N	N	N	55	18	18	38	1	1 1/2	1 1/2	83	83	128	70	101	101		
15		**SPH-5	5000	24	2050	W	Plf	Hyd	N	N	N	55	18	18	38	1	1 1/2	1 1/2	83	83	128	70	101	101		
16		**SPL-4	4000	24	1900	W	Plf	Hyd	N	N	N	55	18	18	38	1	1 1/2	1 1/2	83	83	128	70	101	101		
17		**SPL-5	5000	24	2150	W	Plf	Hyd	N	N	N	55	18	18	38	1	1 1/2	1 1/2	83	83	128	70	101	101		
18		**ISS	4000	24	2450	W	Fk	Hyd	N	N	N	64	18	18	38	1	2	2	68	83	128	68	102	102		
19		**ISS	4000	24	3000	W	Fk	Hyd	N	N	N	60	18	18	38	1	2	2	68	83	128	68	102	102		
20		**THR-12	12000	36	17800*	St	Fk	Ch	N	10	3	78	19%	30	112%	48	4 1/4	3 1/4	83	83	141	49	85	85		
21		**THR-14	14000	36	20650*	St	Fk	Ch	N	10	3	78	19%	30	117%	48	4 1/4	3 1/4	83	83	141	49	85	85		
22		**THR-16	16000	36	21480*	St	Fk	Ch	N	10	3	78	19%	30	117%	48	4 1/4	3 1/4	83	83	141	49	85	85		
23		**THR-18	18000	36	22800*	St	Fk	Ch	N	N	N	70	19	39	117	48	4	3 1/4	83	83	141	49	85	85		
24		**THF-M-10	10000	24	16125*	St	Fk	Ch	N	10	3	68	18%	30	111%	42	4	3 1/4	60	79 1/2	79 1/2	60	81	81		
25		**TLN-2	4000	24	3850	St	Plf	Ch	N	N	N	65	30	30	30	1	3 1/4	3 1/4	60	81	81	60	81	81		
26		**TLN-3	6000	24	4425	St	Plf	Ch	N	N	N	65	30	30	30	1	3 1/4	3 1/4	60	81	81	60	81	81		
27		**TLO-5	10000	24	6000	St	Plf	Ch	N	N	N	78	30	30	30	1	3 1/4	3 1/4	60	81	81	60	81	81		
29	Baker-Raulang	**FL-10	1000	24	2900	S	Fk	Hyd	Y	10	3	36 1/2	10%	24	60 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
30		**FL-10	1000	24	2900	S	Fk	Hyd	Y	10	3	36 1/2	10%	24	60 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
31		**FL-15	1500	24	3950	S	Fk	Hyd	Y	10	3	36 1/2	14%	24	60 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
32		**FL-15	1500	24	3950	S	Fk	Hyd	Y	20	3	36 1/2	14%	24	60 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
33		**FS-15	1500	24	3400	S	Fk	Hyd	Y	10	3	36 1/2	14%	24	60 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
34		**FSE-15	1500	24	3400	S	Fk	Hyd	Y	10	3	38	14%	24	68 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
35		**FS-20	2000	24	4000	S	Fk	Hyd	Y	10	3	38	14%	24	68 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
36		**FSE-20	2000	24	4000	S	Fk	Hyd	Y	10	3	38	14%	24	68 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
37		**FS-25	2500	24	4300	S	Fk	Hyd	Y	10	3	38	14%	24	68 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
38		**FSE-25	2500	24	4300	S	Fk	Hyd	Y	10	3	38	14%	24	68 1/2	36	4 1/4	2 1/2	60	68	119	102	141	141		
39		**FT-20	2000	24	3300	S	Fk	Hyd	Y	10	10	40	11%	24	67	36	5 1/4	2 1/2	62 1/2	68	117	101	141	141		
40		**FTE-20	2000	24	3300	S	Fk	Hyd	Y	10	10	40	11%	24	67	36	5 1/4	2 1/2	62 1/2	68	117	101	141	141		
41		**FT-30	3000	24	5140	S	Fk	Hyd	Y	10	5	43	13%	24	72 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
42		**FTE-30	3000	24	5140	S	Fk	Hyd	Y	10	5	43	13%	24	72 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
43		**FT-40	4000	24	5350	S	Fk	Hyd	Y	10	5	46	13%	24	75 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
44		**FTE-40	4000	24	5350	S	Fk	Hyd	Y	10	5	46	13%	24	75 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
45		**FT-50	5000	24	6300	S	Fk	Hyd	Y	10	5	54	15%	24	79 1/2	36	5 1/4	2 1/2	58 1/2	68	115	101	141	141		
46		**FTE-50	5000	24	6300	S	Fk	Hyd	Y	10	5	54	15%	24	79 1/2	36	5 1/4	2 1/2	58 1/2	68	115	101	141	141		
47		**FT-60	6000	24	7000	S	Fk	Hyd	Y	10	5	54	15%	24	88 1/2	36	5 1/4	2 1/2	58 1/2	68	115	101	141	141		
48		**FTE-60	6000	24	7000	S	Fk	Hyd	Y	10	5	54	15%	24	88 1/2	36	5 1/4	2 1/2	58 1/2	68	115	101	141	141		
49		**FT-70	7000	24	8270	S	Fk	Hyd	Y	10	5	64	15%	24	89 1/2	36	5 1/4	2 1/2	58 1/2	68	115	101	141	141		
50		**FTE-70	7000	24	8270	S	Fk	Hyd	Y	10	5	64	15%	24	89 1/2	36	5 1/4	2 1/2	58 1/2	68	115	101	141	141		
51		**FC-30	3000	24	4800	St	Fk	Hyd	Y	10	3	43	16	24	76 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
52		**FCE-30	3000	24	4800	St	Fk	Hyd	Y	10	3	43	16	24	76 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
53		**FC-40	4000	24	5400	St	Fk	Hyd	Y	10	3	43	16	24	79 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
54		**FCE-40	4000	24	5400	St	Fk	Hyd	Y	10	3	43	16	24	79 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
55		**FC-50	5000	24	7300	St	Fk	Hyd	Y	10	3	48	19	24	82 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
56		**FCE-50	5000	24	7300	St	Fk	Hyd	Y	10	3	48	19	24	82 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
57		**FC-60	6000	24	8900	St	Fk	Hyd	Y	10	3	48	19	24	92 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
58		**FCE-60	6000	24	8900	St	Fk	Hyd	Y	10	3	48	19	24	92 1/2	36	5 1/4	2 1/2	51	68	117	101	141	141		
59		**JOM-70	7000	24	6400	S	Fk	Hyd	N	12	6															

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

OR PLATFORM TRUCKS—continued

TURNING RADIUS (in.) With 40"x48" Pallet				ENGINE OR MOTOR		BATTERY		TRANSMISSION				SPEEDS With Capacity Load				TIRE SIZES		TOWING		
Outside (Following)	Inside	Intersecting Axis Width	Minimum Angle for Right Angle Stacking	Make and Model	Horsepower	Normal Voltage	Amperes Hours	Conventional or Automatic	No. of Forward Speeds	No. of Reverse Speeds	Clutch Type	Truck				Drive Wheels	Steering Wheels	Provision for —	Max. Drawbar Pull	
												Forward (mph)	Reverse (mph)	Hauling (fpm)	Lowering (fpm)					
81 ¹ / ₂	4 ¹ / ₂	72 ¹ / ₂	132 ¹ / ₂	Own		36		N	4	4	N	5.8	5.8	19	FV	Y	20x8	18x7	Opt	1
81 ¹ / ₂	3 ¹ / ₂	74 ¹ / ₂	136 ¹ / ₂	Own		36		N	4	4	N	5.7	5.7	18	FV	Y	20x9	18x7	Opt	2
85 ¹ / ₂	2 ¹ / ₂	79 ¹ / ₂	145 ¹ / ₂	Own		48		N	4	4	N	8.4	8.4	18	FV	Y	22x10	18x8	Opt	3
85 ¹ / ₂	2 ¹ / ₂	79 ¹ / ₂	145 ¹ / ₂	Own		48		N	4	4	N	8.3	8.3	17	FV	Y	22x10	18x8	Opt	4
88 ¹ / ₂	2 ¹ / ₂	80 ¹ / ₂	148 ¹ / ₂	Own		48		N	4	4	N	4.9	4.9	15	FV	Y	22x12	18x8	Opt	5
88 ¹ / ₂	2 ¹ / ₂	80 ¹ / ₂	148 ¹ / ₂	Own		48		N	4	4	N	4.7	4.7	13	FV	Y	22x12	18x8	Opt	6
60 1/2	3 ¹ / ₂	57 ¹ / ₂	108 ¹ / ₂	Auto-Lite	1 1/2	24		N	3	3	N	4.3	4.3	12	FV	Y	15x6	10x6	Opt	7
				Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x6	10x6	N	8
				Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x6	10x7	N	9
				Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x6	10x8	N	10
				Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x6	10x7	N	11
	0			Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x5	3 1/2 x 2 1/4	N	12
	0			Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x5	10x4 1/4	N	13
	0			Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x6	10x4 1/4	N	14
	0			Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x5	5 1/2 x 4 1/2	N	15
	0			Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x6	5 1/2 x 4 1/2	N	16
				Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x5	5 1/2 x 4 1/2	N	17
				Auto-Lite	1 1/2	12		N	2	2	N				Y	Y	10x5	5 1/2 x 4 1/2	N	18
108 ¹ / ₂	5 ¹ / ₂	84 ¹ / ₂	176 ¹ / ₂	Own		48		N	3	3	N	5.0	5.0	14	AB	Y	22x12	15x9	Opt	19
116 ¹ / ₂	10 ¹ / ₂	87 ¹ / ₂	184 ¹ / ₂	Own	(3)			N	3	3	N	4.6	4.6	10-13	AB	Y	22x14	15x7	Opt	20
116 ¹ / ₂	10 ¹ / ₂	97 ¹ / ₂	184 ¹ / ₂	Own	(3)			N	3	3	N	4.5	4.5	9-12	AB	Y	22x14	15x7	Opt	21
116 ¹ / ₂	8 ¹ / ₂	86 ¹ / ₂	184 ¹ / ₂	Own	(3)			N	3	3	N	4.4	4.4	8-11	AB	Y	22x16	15x8	Opt	22
116 ¹ / ₂	8 ¹ / ₂	98 ¹ / ₂	184 ¹ / ₂	Own	(3)			N	3	3	N	4.2	4.2	6-9	AB	Y	22x18	15x8	Opt	23
108 ¹ / ₂	2 ¹ / ₂	92 ¹ / ₂	188 ¹ / ₂	Own		30		N	3	3	N	6.2	5.2	11-12	38*	Y	22x12	15x8	Opt	24
97 ¹ / ₂	48 ¹ / ₂	61 ¹ / ₂		Own		30		N	4	4	N	8.2		11	DB	Y	22x4 1/2	9x5	N	25
99 ¹ / ₂	46 ¹ / ₂	82 ¹ / ₂		Own	(4)			N	4	4	N	4.2	4.2	14	DB	Y	20x8	10x6	N	26
118 ¹ / ₂	62 ¹ / ₂	69 ¹ / ₂		Own	(4)			N	3	3	N	4.9	4.9	8-10	DB	Y	20x7	10x6	N	27
59	4	55 ¹ / ₂	117 1/2	Own	1653	5	(5)	300	3	3		5.7	5.7	44	Var	Opt	15x3 1/2	10x4	N	28
59	4	58 ¹ / ₂	117 1/2	Own	1663	5	(5)	300	3	3		5.7	5.7	44	Var	Opt	15x3 1/2	10x4	N	29
59	4	58 ¹ / ₂	117 1/2	Own	1953	5	(5)	300	3	3		5.7	5.7	44	Var	Opt	15x3 1/2	10x4	N	30
59	4	58 ¹ / ₂	117 1/2	Own	1653	5	(5)	300	3	3		5.7	5.7	44	Var	Opt	15x3 1/2	10x4	N	31
62	5	58 ¹ / ₂	124 1/2	Own	1653L	6	(4)	5	5	5		6.2	6.2	30	Var	Y	17 1/2 x 8	10 1/2 x 6	N	32
62	5	58 ¹ / ₂	124 1/2	Own	1653L	6	(4)	5	5	5		6.2	6.2	30	Var	Y	17 1/2 x 8	10 1/2 x 6	N	33
65	5	60 ¹ / ₂	127 1/2	Own	1653L	6	(4)	5	5	5		6.0	6.0	27	Var	Y	17 1/2 x 8	10 1/2 x 6	N	34
65	5	60 ¹ / ₂	127 1/2	Own	1653L	6	(4)	5	5	5		6.0	6.0	27	Var	Y	17 1/2 x 8	10 1/2 x 6	N	35
66	5	62 ¹ / ₂	130 1/2	Own	1653L	6	(4)	5	5	5		5.8	5.8	24	Var	Y	17 1/2 x 8	10 1/2 x 6	N	36
66	5	62 ¹ / ₂	130 1/2	Own	1654L	6	(4)	5	5	5		5.8	5.8	24	Var	Y	17 1/2 x 8	10 1/2 x 6	N	37
65 1/2	3 1/2	60 ¹ / ₂	125 1/2	Own	1985	8	(4)	5	5	5		5.6	5.6	38	Var	Y	16 1/2 x 8	13x3 1/2	N	38
65 1/2	2 1/2	60 ¹ / ₂	125 1/2	Own	1985	8	(4)	5	5	5		5.6	5.6	38	Var	Y	16 1/2 x 8	13x3 1/2	N	39
73 1/2		68 1/2	135 1/2	Own	1985	8	(4)	400	5	5		4.9	4.9	30	Var	Y	17 1/2 x 8	14x4 1/2	Y	40
73 1/2		68 1/2	135 1/2	Own	1985	8	(4)	400	5	5		4.9	4.9	30	Var	Y	17 1/2 x 8	14x4 1/2	Y	41
74		68 1/2	135 1/2	Own	1985	8	(4)	450	5	5		4.2	4.2	28	Var	Y	18x7	14x4 1/2	Y	42
74		68 1/2	135 1/2	Own	1985	8	(4)	450	5	5		4.2	4.2	28	Var	Y	18x7	14x4 1/2	Y	43
80	5 1/2	73 1/2	145 1/2	Own	1985	8	(4)	550	5	5		4.9	4.9	20	Var	Y	22x8	16 1/2 x 6	Y	44
80	5 1/2	73 1/2	145 1/2	Own	1985	8	(4)	550	5	5		4.9	4.9	20	Var	Y	22x8	16 1/2 x 6	Y	45
81 1/2	6	73 1/2	145 1/2	Own	2480	8	(4)	550	5	5		4.7	4.7	17	Var	Y	22x8	16 1/2 x 6	Y	46
81 1/2	6	73 1/2	145 1/2	Own	2480	8	(4)	550	5	5		4.7	4.7	17	Var	Y	22x8	16 1/2 x 6	Y	47
86 1/2	6	74 1/2	150 1/2	Own	2480	8	(4)	600	5	5		4.4	4.4	18	Var	Y	22x9	16 1/2 x 6	Y	48
86 1/2	6	74 1/2	150 1/2	Own	2480	8	(4)	600	5	5		4.4	4.4	18	Var	Y	22x9	16 1/2 x 6	Y	49
74	5	68 1/2	135 1/2	Own	1985	8	(4)	400	5	5		5.7	5.7	29	Var	Y	22x8	16 1/2 x 6	N	50
74	5	68 1/2	135 1/2	Own	1985	8	(4)	400	5	5		5.7	5.7	29	Var	Y	22x8	16 1/2 x 6	N	51
74	5	68 1/2	135 1/2	Own	1985	8	(4)	450	5	5		5.3	5.3	28	Var	Y	22x7	16 1/2 x 6	N	52
74	5	68 1/2	135 1/2	Own	1985	8	(4)	450	5	5		5.3	5.3	28	Var	Y	22x7	16 1/2 x 6	N	53
81	8	72 1/2	138 1/2	Own	1985	8	(4)	500	5	5		5.0	5.0	20	Var	Y	22x8	15x8	N	54
81	8	72 1/2	138 1/2	Own	1985	8	(4)	500	5	5		5.0	5.0	20	Var	Y	22x8	15x8	N	55
82	8	72 1/2	148 1/2	Own	2480	8	(4)	580	5	5		5.0	5.0	16	Var	Y	22x8	15x8	N	56
82	8	72 1/2	148 1/2	Own	2480	8	(4)	580	5	5		5.0	5.0	16	Var	Y	22x8	15x8	N	57
98	20	80 1/2	158 1/2	Own	2480	8	(9)	600	5	5		5.7	5.7	33	Var	Y	22x10	16x8	Y	58
98	20	80 1/2	158 1/2	Own	2480	8	(9)	600	5	5		5.7	5.7	33	Var	Y	22x10	16x8	Y	59
85	22	85 1/2	168 1/2	Own	2480	8	(9)	680	5	5		5.2	5.2	20	Var	Y	22x12	15x8	Y	60
85	22	85 1/2	168 1/2	Own	2480	8	(9)	680	5	5		5.2	5.2	20	Var	Y	22x12	15x8	Y	61
92	24	92 1/2	178 1/2	Own	2480	8	(9)	680	5	5		5.2	5.2	20	Var	Y	22x12	15x8	Y	62
92	24	92 1/2	178 1/2	Own	2480	8	(9)	680	5	5		5.2	5.2	20	Var	Y	22x12	15x8	Y	63
118	26	98 1/2	178 1/2	Hertner	12	(3)	680		3	3		4.0	4.0	17	Var	Y	22x14	15x10	N	64
124	26	100 1/2	192 1/2	H																

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED HIGH-LIFT FORK

Line Number	MAKE AND MODEL	MAXIMUM CAPACITY	Load (lb.)	Load Center (in.)	Service Weight (lb.) Excluding Battery	Operator—Sit, Stand, Walks	Lift—Fork or Platform	Lifting Power	MAST				OVERALL DIMENSIONS													
									Tilt		Wheelbase (in.)	Face of Forks to Centerline of Front Axle (in.)	Load Center (in.)	Length		Fork	Under-clearance At Truck Center	At Mast	Free Lift	Mast Collapsed		Mast Extended		Lifting		Overall Including Carriage or Backguard
									Telescopic	Forward (Deg.)				Minimum	Maximum					Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	
1	Baker—Continued	**80H	3000	24	4800	S	Fk	Hyd	Y	10	5	48	14	24	72 1/2	36 1/2	5 1/2	3	43 1/2	68 1/2	115 1/2	115 1/2	97 1/2	97 1/2	120 1/2	
2		**FTDL-40	4000	24	5400	S	Fk	Hyd	Y	10	5	48	14	24	75 1/2	36 1/2	5 1/2	3	43 1/2	68 1/2	115 1/2	115 1/2	97 1/2	97 1/2	120 1/2	
3		**FTDL-60	6000	24	7300	S	Fk	Hyd	Y	10	5	54	16	24	81 1/2	36 1/2	5 1/2	3	43 1/2	68 1/2	115 1/2	115 1/2	97 1/2	97 1/2	120 1/2	
4		**FTDL-80	8000	24	8000	S	Fk	Hyd	Y	10	5	54	16	24	81 1/2	36 1/2	5 1/2	3	43 1/2	68 1/2	115 1/2	115 1/2	97 1/2	97 1/2	120 1/2	
5		**FTDL-100	10000	24	8000	S	Fk	Hyd	Y	10	5	54	16	24	72 1/2	36 1/2	5 1/2	3	27 1/2	68 1/2	68 1/2	96 1/2	96 1/2	78 1/2	78 1/2	101 1/2
6		**FTDL-120	12000	24	8000	S	Fk	Hyd	Y	10	5	54	16	24	75 1/2	36 1/2	5 1/2	3	27 1/2	68 1/2	68 1/2	96 1/2	96 1/2	78 1/2	78 1/2	101 1/2
7		**FTDL-140	14000	24	8000	S	Fk	Hyd	Y	10	5	54	16	24	75 1/2	36 1/2	5 1/2	3	27 1/2	68 1/2	68 1/2	96 1/2	96 1/2	78 1/2	78 1/2	101 1/2
8		**FTDL-160	16000	24	8000	S	Fk	Hyd	Y	10	5	54	16	24	81 1/2	36 1/2	5 1/2	3	24 1/2	68 1/2	68 1/2	96 1/2	96 1/2	78 1/2	78 1/2	101 1/2
9		**FTDL-180	18000	24	8000	S	Fk	Hyd	Y	10	5	54	16	24	81 1/2	36 1/2	5 1/2	3	24 1/2	68 1/2	68 1/2	96 1/2	96 1/2	78 1/2	78 1/2	101 1/2
10		**FC-20	2000	24	4180	St	Fk	Hyd	Y	10	5	40	11 1/2	24	68	38 1/2	4 1/2	3	62 1/2	68 1/2	91 1/2	117 1/2	161 1/2	100 1/2	144 1/2	165 1/2
11		**FCE-20	2000	24	4180	St	Fk	Hyd	Y	10	5	40	11 1/2	24	68	38 1/2	4 1/2	3	62 1/2	68 1/2	91 1/2	117 1/2	161 1/2	100 1/2	144 1/2	165 1/2
12		**FGD-20	2000	24	4300	S	Fk	Hyd	Y	10	5	40	11 1/2	24	68	38 1/2	4 1/2	3	12 1/2	68 1/2	91 1/2	117 1/2	161 1/2	100 1/2	144 1/2	165 1/2
13		**FGDE-20	2000	24	4300	S	Fk	Hyd	Y	10	5	40	11 1/2	24	68	38 1/2	4 1/2	3	12 1/2	68 1/2	91 1/2	117 1/2	161 1/2	100 1/2	144 1/2	165 1/2
14		**FGF-40	4000	24	7400	S	Fk	Hyd	Y	10	5	48	17 1/2	24	85 1/2	38 1/2	7 1/2	5 1/2	63 1/2	102 1/2	152 1/2	190 1/2	130 1/2	168 1/2	190 1/2	
15		**FGF-40	4000	24	7400	S	Fk	Hyd	Y	10	5	48	17 1/2	24	85 1/2	38 1/2	7 1/2	5 1/2	63 1/2	102 1/2	152 1/2	190 1/2	130 1/2	168 1/2	190 1/2	
16		TE-4	4000	24	11000	S	Fk	Hyd	Y	5	5	88 1/2	61		136 1/2	40										
17		T-8	6000	24	10000	S	Fk	Hyd	Y	7	5	104			204	48										
18		T-10A-G	10000	33	18600	S	Fk	Hyd	Y	5	5	138			234	76 1/2			112 1/2	120		184 1/2	144 1/2			
19		T-30-G	30000	33	43300	S	Fk	Hyd	Y	5	5	185			314			126	140		198	144 1/2				
20		T-12A-G	12000	33	18400	S	Fk	Hyd	Y	5	5	138			234	66 1/2			120			144 1/2				
21		T-12A-G	12000	33	20200	S	Fk	Hyd	Y	5	5	138			234	66 1/2			120			144 1/2				
22		T-10A-G	10000		19400	S	Fk	Hyd	Y									112 1/2	120		184 1/2					
23		T-30-G	30000			S	Fk	Hyd	Y									126	134		198					
24	Barratt-Gravens	**NTF-20-40	2000	24	3535	W	Fk	HE	N	N	N	32	9 1/2	24	58 1/2	37	48	3 1/2	2	60	83	68	60	83	60	83
25		**NTF-20-45	2000	24	3285	W	Fk	HE	N	N	N	32	9 1/2	24	58 1/2	37	48	3 1/2	2	60	83	68	60	83	60	83
26		**NTF-20-50	2000	24	3620	W	Fk	HE	N	N	N	32	9 1/2	24	58 1/2	37	48	3 1/2	2	60	83	68	60	83	60	83
27		**NTF-2-5-45	2000	24	3370	W	Fk	HE	N	N	N	32	9 1/2	24	58 1/2	37	48	3 1/2	2	60	83	68	60	83	60	83
28		**NTF-20-T-80	2000	24	3630	W	Fk	HE	N	N	N	32	9 1/2	24	58 1/2	37	48	3 1/2	2	60	83	68	60	83	60	83
29		**NTF-20-T-120	2000	24	3880	W	Fk	HE	N	N	N	32	9 1/2	24	58 1/2	37	48	3 1/2	2	60	83	68	60	83	60	83
30	Champ	**700	4000	24	7800	S	Fk	Hyd	Y	9	6	67	21	2 1/2	120	42	15	9	N	139	140	236	237	66	192	236
31		**300	4000	24	8180	S	Fk	Hyd	Y	12	4	67	21	2 1/2	120	42	15	9	N	139	140	236	237	66	192	236
32		**600	4000	24	9680	S	Fk	Hyd	Y	12	6	73	24	2 1/2	137	42	72	15	9	N	161	162	281	282	168	240
33	Clark	**ETR-1024	1000	24	1615	S	Fk	Hyd	Y	10	3	37 1/2	12 1/2	36 1/2	53 1/2	30 1/2	5	2 1/2	6 1/2	56	84	83	149	74	130	
34		**ECE-2024	2000	24	3490	S	Fk	Hyd	Y	10	3	37	12 1/2	43 3/8	63 1/2	30 1/2	3 1/2	2 1/2	6 1/2	57	87	90 1/2	150 1/2	72	132	
35		**ESW-2024	2000	24	4900	St	Fk	Hyd	Y	14	4	46	12 1/2	40 1/2	69 1/2	30 1/2	3 1/2	3 1/2	6 1/2	57	87	90 1/2	150 1/2	72	132	
36		**ECL-3024	3000	24	5030	S	Fk	Hyd	Y	10	3	44	15	40 1/2	74 1/2	36 1/2	4 1/2	3	6 1/2	59	102	93 1/2	177 1/2	72	156	
37		**EX-EC1-3024	3000	24	7840	S	Fk	Hyd	Y	7	3	52	16	40 1/2	82 1/2	36 1/2	4 1/2	3 1/2	6 1/2	59	102	93 1/2	177 1/2	72	156	
38		**ECL-4024	4000	24	5480	S	Fk	Hyd	Y	10	3	48	15	40 1/2	82 1/2	36 1/2	4 1/2	3	6 1/2	59	102	93 1/2	177 1/2	72	156	
39		**EX-EC1-4024	4000	24	8290	S	Fk	Hyd	Y	10	3	44	15	40 1/2	82 1/2	36 1/2	4 1/2	3	6 1/2	59	102	93 1/2	177 1/2	72	156	
40		**ECS-4024	4000	24	8965	S	Fk	Hyd	Y	10	3	48	15	40 1/2	82 1/2	36 1/2	4 1/2	3	6 1/2	59	102	93 1/2	177 1/2	72	156	
41		**ECL-4024	4000	24	6833	S	Fk	Hyd	Y	10	3	48	15	40 1/2	82 1/2	36 1/2	4 1/2	3	6 1/2	59	102	93 1/2	177 1/2	72	156	
42		**EX-EC1-5024	5000	24	9000	S	Fk	Hyd	Y	7	3	52	16	40 1/2	82 1/2	36 1/2	4 1/2	3 1/2	7 1/2	59	102	93 1/2	177 1/2	72	156	
43		**EUT-6024	6000	24	8073	S	Fk	Hyd	Y	10	3	54	15 1/2	45 1/2	87 1/2	42 1/2	4 1/2	2 1/2	25	61 1/2	117	95 1/2	203 1/2	72	180	
44		**EUT-7024	7000	24	8653	S	Fk	Hyd	Y	10	3	54	15 1/2	45 1/2	87 1/2	42 1/2	4 1/2	2 1/2	25	61 1/2	117	95 1/2	203 1/2	72	180	
45		**TR-1024	1000	24	2805	S	Fk	Hyd	Y	10	3	30 1/2	10 1/2	38 1/2	59 1/2	30 1/2	5 1/2	2 1/2	6 1/2	56	84	83	149	74	130	
46		**CE-2024	2000	24	4750	S	Fk	Hyd	Y	10	3	36	12 1/2	49 1/2	67 1/2	30 1/2	3 1/2	3 1/2	7	57	87	90 1/2	150 1/2	72	132	
47		**CL-3024	3000	24	6200	S	Fk	Hyd	Y	10	3	47	15	40 1/2	73 1/2	36 1/2	4 1/2	3	6 1/2	59	116	93 1/2	203 1/2	72	180	
48		**CL-4024	4000	24	6800	S	Fk	Hyd	Y	10	3	48	15	40 1/2	81 1/2	36 1/2	4 1/2	3	6 1/2	59	116	93 1/2	203 1/2	72	180	
49		**CL-5024	5000	24	7800	S	Fk	Hyd	Y	10	3	48	15	40 1/2	83 1/2	36 1/2	4 1/2	3	6 1/2	59	116	93 1/2	203 1/2	72	180	
50		**UT-6024	6000	24	8900	S	Fk	Hyd	Y	10	3	54	15 1/2	45 1/2	89 1/2	42 1/2	4 1/2	3	25	60	117	95 1/2	203 1/2	72	180	
51		**UT-7024	7000	24	10200	S	Fk	Hyd	Y	10	3	54	15 1/2	45 1/2	89 1/2	42 1/2	4 1/2	3	25	60	117	95 1/2	203 1/2	72	180	
52		**HUTS-7024	7000	24	10000	S	Fk	Hyd	Y	10	3	60														

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

OR PLATFORM TRUCKS—continued

TURNING RADIUS (In.) With 40"x48" Pallet				ENGINE OR MOTOR		BATTERY		TRANSMISSION		SPEEDS With Capacity Load				TIRE SIZES		TOWING						
Outside Tailwheel	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking	Make and Model	Horsepower	Normal Voltage	Ampere Hours	Conventional or Automatic	No. of Forward Speeds	No. of Reverse Speeds	Clutch Type	Truck				Drive Wheels	Steering Wheels	Provision for	Max. Drawbar Pull	Line Number		
												Forward (mph)	Reverse (mph)	Hauling (fpm)	Lowering (fpm)							
74		66 1/4	135 1/2	Her (50)	1865	8	4	490	5	5		4.9	4.9	30	Var	Y	18x7	14x4 1/2	N		1	
74		66 1/4	135 1/2	Ow	1865	8	4	450	5	5		4.2	4.2	28	Var	Y	18x7	14x4 1/2	N		2	
81 1/2	6	73 1/2	145 1/2	Ow	2480	8	4	500	5	5		4.9	4.9	23	Var	Y	22x8	16 1/2 x 5	N		3	
81 1/2	6	73 1/2	145 1/2	Ow	2480	8	4	550	5	5		4.7	4.7	17	Var	Y	22x8	16 1/2 x 5	N		4	
74		66 1/4	135 1/2	Ow	1865	8	4	400	5	5		4.9	4.9	31	Var	Y	18x7	14x4 1/2	N		5	
74		66 1/4	135 1/2	Ow	1865	8	4	450	5	5		4.2	4.2	28	Var	Y	18x7	14x4 1/2	N		6	
81 1/2	6	73 1/2	145 1/2	Ow	2480	8	4	500	5	5		4.9	4.9	23	Var	Y	22x8	16 1/2 x 5	N		7	
81 1/2	6	73 1/2	145 1/2	Ow	2480	8	4	550	5	5		4.7	4.7	17	Var	Y	22x8	16 1/2 x 5	N		8	
65 1/2	2 1/2	58 1/2	124 1/2	Ow	1653L	8	4	6	5	5		7.0	7.0	38	Var	Y	16 1/2 x 5	13x3 1/2	N		9	
65 1/2	2 1/2	58 1/2	124 1/2	Ow	1653L	8	4	6	5	5		7.0	7.0	38	Var	Y	16 1/2 x 5	13x3 1/2	N		10	
61 1/2	2 1/2	57 1/2	120 1/2	Her (50)	IXA	29	8	100	Conv	2	2	Fr	7.0	7.0	45	Var	Y	16 1/2 x 5	13x3 1/2	Y		11
61 1/2	2 1/2	57 1/2	120 1/2	Her (50)	IXA	29	8	100	Conv	2	2	Fr	7.0	7.0	45	Var	Y	16 1/2 x 5	13x3 1/2	Y		12
79	5 1/2	71 1/2	144 1/2	Her (50)	IXLB3	37	8	115	Conv	2	2	Fr	5.9	5.6	42	Var	Y	7.00/12	6.00/7	Y		13
79	5 1/2	71 1/2	144 1/2	Her (50)	IXLB3	37	8	115	Conv	2	2	Fr	5.9	5.6	42	Var	Y	7.00/12	6.00/9	Y		14
												5.9	5.5				18x6	16 1/2 x 4			15	
												13.0	13.0				7.50/17	7.50/17			17	
		294	120	Her	JXD	106			Aut	2	1	25.0	30.0	21			11.00/15	11.00/15			18	
		294	120	Her	WXLC3	132			Aut	3	3	10.0	20.0	17 1/2			12.00/24	12.00/24			19	
		294	120	Her					Aut			25.0	30.0				11.00/15	11.00/15			20	
				Her	DJXH	97 1/2			Aut	2	1			21							22	
				Her	DWDX	131			Aut	3	3			17 1/2							23	
78	14	70	110 1/2	Ow		1	12	(10)	2	2		2.0	2.0	10	Y	Y	10x5	10x6	N		24	
78	14	70	110 1/2	Ow		1	12	(10)	2	2		2.0	2.0	10	Y	Y	10x5	10x6	N		25	
78	14	70	110 1/2	Ow		1	12	(10)	2	2		2.0	2.0	10	Y	Y	10x5	10x6	N		26	
78	14	70	110 1/2	Ow		1	12	(10)	2	2		2.0	2.0	10	Y	Y	10x5	10x6	N		27	
78	14	70	110 1/2	Ow		1	12	(10)	2	2		2.0	2.0	10	Y	Y	10x5	10x6	N		28	
78	14	70	110 1/2	Ow		1	12	(10)	2	2		2.0	2.0	10	Y	Y	10x5	10x6	N		29	
				Chry	31A	106	6		Conv	4	1	FI	25.0	5.0	72	72	N	13.00/24	7.5/15	Y	18000	30
				Chry	31A	106	6		Conv	4	1	FI	25.0	5.0	72	72	N	10.00/18	7.5/15	Y	16000	31
				Chry	33A	107	6		Conv	4	1	FI	30.0	5.0	60	60	N		8.25/15	Y	20000	32
58	12	51 1/2	68 1/2	General Electric					3	3	Ele	6.5	6.5	24	77	Y	16 1/2 x 11 1/2	13x3 1/2 x 8 1/2	Opt		33	
62	6 1/2	57	74	General Electric					4	4	Ele	6.3	6.3	35	95	Y	16 1/2 x 11 1/2	13x4 1/2 x 8	Opt		34	
62	3 1/2	60	74 1/2	General Electric					4	4	Ele	6.5	6.5	38		Y	16 1/2 x 11 1/2	10x4 1/2 x 8	Opt		35	
69	8	63 1/2	84 1/2	General Electric					4	4	Ele	5.5	5.5	21	71	Y	21x6 1/2	15 1/2 x 5 x 10	Opt		36	
84	10	75	98 1/2	Allis Chalmers					4	4	Ele	6.0	6.0	19		Y	21x6 1/2	15 1/2 x 5 x 10	Opt		37	
78	9	68 1/2	93 1/2	Allis Chalmers					4	4	Ele	5.3	5.3	28	140	Y	21x7 1/2	15 1/2 x 5 x 10	Opt		38	
84	10	75	98 1/2	Allis Chalmers					4	4	Ele	6.0	6.0	19		Y	21x7 1/2	15 1/2 x 5 x 10	Opt		39	
71	8	65 1/2	86	General Electric					4	4	Ele	5.3	5.3	17	80	Y	21x7 1/2	15 1/2 x 5 x 10	Opt		40	
78	9	68 1/2	93	Allis Chalmers					4	4	Ele	5.1	5.1	24	160	Y	21x8 1/2	15 1/2 x 5 x 10	Opt		41	
85 1/2	10	76	98 1/2	Allis Chalmers					4	4	Ele	5.8	5.8	20		Y	21x8 1/2	15 1/2 x 5 x 10	Opt		42	
84	7	75 1/2	98 1/2	Allis Chalmers					4	4	Ele	6.2	6.2	21	148	Y	22x9 1/2	15 1/2 x 5 x 10	Opt		43	
86	7	78	101 1/2	Allis Chalmers					4	4	Ele	6.2	6.2	20	160	Y	22x9 1/2	15 1/2 x 5 x 10	Opt		44	
57	12	49	67 1/2	Cont	N-62	14			Conv	1	1	Fr	5.0	4.5	38	N	16 1/2 x 11 1/2	13x3 1/2 x 8 1/2	Opt		45	
65	7 1/2	56	77 1/2	Cont	F-81	21			Conv	2	2	Fr	8.2	7.1	48	N	16 1/2 x 11 1/2	13x4 1/2 x 8	Opt		46	
71 1/2	7	65	86 1/2	Cont	F-4124	31 1/2			CA	2	2	FE	7.4	6.3	30	N	21x6 1/2	15 1/2 x 5 x 10	Y		47	
78	11	67	93	Cont	F-4124	31 1/2			CA	2	2	FE	7.4	6.3	30	N	21x7 1/2	15 1/2 x 5 x 10	Y		48	
81 1/2	10 1/2	70	98 1/2	Cont	F-4124	31 1/2			CA	2	2	FE	7.4	6.3	31	N	21x8 1/2	15 1/2 x 5 x 10	Y		49	
83	3	76	98 1/2	Cont	F-6209	52			CA	2	2	FE	7.4	6.3	42	N	22x9 1/2	15 1/2 x 5 x 10	Y		50	
84 1/2	3	78	99 1/2	Cont	F-6209	52			CA	2	2	FE	7.4	6.3	42	N	22x9 1/2	15 1/2 x 5 x 10	Y		51	
92	7 1/2	78	107 1/2	Cont (49)	F-6209	52			Aut	1	1		7.4	7.3	42	N	22x9 1/2	18x7 1/2 x 1 1/2	Y		52	
92	8	80	107 1/2	Cont (49)	F-6209	52			Aut	1	1		5.8	5.7	42	N	22x5 1/2	18x7 1/2 x 1 1/2	Y		53	
100 1/2	7 1/2	89 1/2	117 1/2	Cont (49)	F-6209	52			Aut	1	1		5.8	5.7	29	N	22x12x16	18x7 1/2 x 1 1/2	Y		54	
104	7 1/2	89 1/2	117 1/2	Cont (49)	F-6209	52			Aut	1	1		5.8	5.7	29	N	22x12x16	18x7 1/2 x 1 1/2	Y		55	
71 1/2	12	60	86	Cont	F-81	22 1/2			Conv	2	2	Fr	8.4	7.2	49	N	6.00/9	5.00/8	Y		56	
85 1/2	10	73	103 1/2	Cont	F-4124	31 1/2			CA	3	3	FE	10.2	10.2	32	N	7.00/12	6.00/9	Y		57	
111	8	94	131 1/2	Cont	F-6209	52			CA	3	3	FE	10.7	10.7	35	N	7.50/15	7.50/10	Y		58	
135 1/2	13 1/2	116	158 1/2	Cont	F-6209	55			Conv	4	4	Fr	18.0	18.0	27	N	8.25/18	7.50/15	Y		60	
165	24	138	192 1/2	Her	QXLD-3	82 1/2			Conv	4	4	Fr	23.7	21.4	43	N	8.20/23	8.25/15	Y		61	
165	24	138	192 1/2	Her	QXLD-3	82 1/2			Conv	4	4	Fr	23.7	21.4	38	N	9.00/23	8.25/15	Y		62	
72 1/2		57	77 1/2	AL or AC					2	2		2.2	2.2	9	20	Y	10 1/2 x 6 1/2	6x5	N		63	
72 1/2		57	77 1/2	AL or AC					2	2		2.2	2.2	9	23	Y	10 1/2 x 6 1/2	10x6 1/2	N		64	
53 1/2	53	94 1/2	AL or AC						2	2		2.5	2.5	17	26	Y	10 1/2 x 6 1/2	10x6 1/2	N		65	
53 1/2	53	94 1/2	AL or AC						2	2		2.5	2.5	17	26	Y	10 1/2 x 6 1/2	10x6 1/2	N		66	
56 1/2	54 1/2	97	AL or AC						2	2		2.4	2.4	16	23	Y	10 1/2 x 6 1/2	10x6 1/2	N		67	
60 1/2	56 1/2	100 1/2	AL or AC																			

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED HIGH-LIFT FORK

Line Number	MAKE AND MODEL	MAKE MAXIMUM CAPACITY		Service Weight (lb.) — Excluding Battery	Operator — Sit, Stand, Walks	Lift — Fork or Platform	Lifting Power	MAST					OVERALL DIMENSIONS												
		Load (lb.)	Load Center (In.)					Tilt	Wheelbase (In.)	Face of Forks to Centerline of Front Axle	Load Center (In.)	Less Forks	Length		Under-clearance	Height									
													Minimum	Maximum		At Truck Center	At Mast	Free Lift	Mast Collapsed		Mast Extended		Lifting		Overall — Including Carriage or Backrest
																			Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	
1	Crescent	**JCL-1-15	1000	15	2120	S	Fk	Hyd	Y	10	3	36½	12½	15	69½	6	4	29	68	83	108	137	91	120	137
2		**JCL-1			2445	S	Fk	Hyd	Y	10	3	36½	13½	24	64½	6	4	29	68	83	108	137	91	120	137
3		**JCL-1.5			2875	S	Fk	Hyd	Y	10	3	36	14½	24	65½	6	4	29	68	83	108	137	91	120	137
4		**JCH-2	2000	15	2120	S	Fk	Hyd	Y	10	5	38½	11½	24	63	4	3	64½	68	83	123	153	100	130	137
5		**JCH-3	3000	24	2120	S	Fk	Hyd	Y	10	5	38½	11½	24	65½	4	3	64½	68	83	123	153	100	130	137
6		**JEM-1	1000	15	2120	S	Fk	Hyd	Y	5	3	34½	11	24	53	3	3	66	68	83	107	137	90	130	137
7		**JEM-2-18	2000	15	2120	S	Fk	Hyd	Y	5	3	34½	11½	18	55½	3	3	66	68	83	107	137	90	130	137
8		**JEM-2	2000	15	2120	S	Fk	Hyd	Y	5	3	34½	11½	24	57½	3	3	66	68	83	107	137	90	130	137
9		**JEM-3	3000	24	2120	S	Fk	Hyd	Y	5	3	42	13½	24	64½	4	3	64½	68	83	122	152	100	130	152
10		**MEH-4	4000	24	2120	S	Fk	Hyd	Y	5	3	42	15½	24	68½	4	3	63½	68	83	122	152	100	130	152
11		**MCH-4	4000	24	2120	S	Fk	Hyd	Y	10	5	40	15½	24	71½	4	3	63½	68	83	123	153	100	130	153
12		**MCH-5	5000	24	2120	S	Fk	Hyd	Y	10	5	41	16½	24	76½	4	3	64	68	83	122½	152½	100	130	152½
13		**MCH-6	6000	24	2120	S	Fk	Hyd	Y	10	5	44	16½	24	82½	4	3	64	68	83	122½	152½	100	130	152½
14		**MCL-7	7000	24	2120	S	Fk	Hyd	Y	10	5	55	18½	24	94½	5	4	7½	83	142½	146½	100	124	146½	
15		**MCL-8	8000	24	2120	S	Fk	Hyd	Y	10	5	55	18½	24	94½	5	4	7½	83	142½	146½	100	124	146½	
16	Eliwell-Parker	**F-28T2	2000	24	5000	S	Fk	Hyd	Y	10	5	40	14½	24	67½	38	48	3½	17	83	148	130	149		
17		**F-28T2	2000	24	4800	S	Fk	Hyd	Y	10	5	40	14½	24	67½	38	48	3½	17	83	148	130	149		
18		**F-28T3	3000	24	5300	S	Fk	Hyd	Y	10	5	40	14½	24	70	30	3½	17	83	148	130	149			
19		**F-28T3	3000	24	5100	S	Fk	Hyd	Y	10	5	40	14½	24	70	30	3½	17	83	148	130	149			
20		**F-38T2	2000	24	5050	S	Fk	Hyd	Y	10	5	45	9½	24	64	38	8	50	68	118	118	100	119		
21		**F-38T2	2000	24	4985	S	Fk	Hyd	Y	10	5	45	9½	24	64	38	8	50	68	118	118	100	119		
22		**F-38T3	3000	24	5250	S	Fk	Hyd	Y	10	5	49	9½	24	66	38	5	17	83	148	130	149			
23		**F-38T3	3000	24	5190	S	Fk	Hyd	Y	10	5	49	9½	24	66	38	5	17	83	148	130	149			
24		**F-48T3	3000	24	5300	S	Fk	Hyd	Y	10	5	43	14½	24	72½	48	6½	50	83½	148	130	149			
25		**F-30T3	3000	24	7300	S	Fk	Hyd	Y	12	5	42	12	24	73½	38	48	8	17	83	147	130	149		
26		**F-30T3	3000	24	7000	S	Fk	Hyd	Y	12	5	42	12	24	73½	38	48	8	17	83	147	130	149		
27		**F-30T4	4000	24	7600	S	Fk	Hyd	Y	12	5	46	13½	24	78½	38	48	7	17	83	147	130	149		
28		**F-30T4	4000	24	7400	S	Fk	Hyd	Y	12	5	46	13½	24	78½	38	48	7	17	83	147	130	149		
29		**F-31T6	6000	24	9800	S	Fk	Hyd	Y	12	5	48	14½	24	82½	38	48	6½	17	86	145	126	147		
30		**F-31T6	6000	24	9650	S	Fk	Hyd	Y	12	5	48	14½	24	82½	38	48	6½	17	86	145	126	147		
31		**F-31T7	7000	24	10585	S	Fk	Hyd	Y	12	5	54	14½	24	86½	38	48	6½	17	83	145	126	147		
32		**F-38T8	8000	24	10000	S	Fk	Hyd	Y	12	5	54	18	24	94	38	48	9½	17	83	140	116	152		
33		**F-38T10	10000	24	13300	S	Fk	Hyd	Y	12	5	61	19	24	96	38	48	8	17	83	137	110	146		
34		**F-25T	10000	24	15000	S	Fk	Ch	Y	12	3	87	17	24	102	38	48	4½	67	95	151	124	152		
35		**F-5	12000	36	18500	S	Fk	Ch	Y	10	3	72	17	30	111	60	4½	58	95	151	124	152			
36		**F-6	15000	36	22500	S	Fk	Ch	Y	10	3	72	17	30	117	72	4½	57	96	151	124	152			
37		**F-6	16000	36	24800	S	Fk	Ch	Y	10	3	72	17	30	145	78	4½	53	96	151	124	152			
38		**R-20	30000	42	27000	S	R	Hyd	N	N	N	100	26	42	150	84	7	95	136½	95½	138	141			
39		**R-30	30000	42	28800	S	R	Hyd	N	N	N	100	26	42	151	84	7	95	141½	95½	141	144			
40		**R-40	40000	39	32900	S	R	Hyd	N	N	N	110	26½	39	171½	78	7	100	144½	100½	144	144			
41		**R-50	50000	42	60700	S	R	Hyd	N	N	N	110	27	42	172	84	7	104	144½	94½	144	144			
42		**R-60	60000	48	68900	S	R	Hyd	N	N	N	110	27	45	172	90	7	104	144½	88½	144	144			
43		**E-11-T	4000	24	3300	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
44		**E-11-T	4000	24	3725	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
45		**E-2	4000	24	3700	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
46		**E-2-T	4000	24	4400	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
47		**E-4	6000	24	4750	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
48		**E-4-T	6000	24	5600	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
49		**E-10	10000	24	6000	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
50		**E-10-T	10000	24	8200	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
51		**E-16	16000	36	8500	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
52		**E-20	20000	36	9900	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
53		**E-30	30000	36	13800	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
54		**E-50	50000	36	20000	S	Plf	Ch	N	N	N	41	87½	41	60	1½	2½	65½	83	141½	124	100	119		
55		**E-12-10	10000	36	9000	S	Plf	Hyd	N	N	N	74	146	74	2½	4½	83	83	102	102	102	102			
56		**E-12-16	16000	36	12600	S	Plf	Hyd	N	N	N	74	146	74	2½	4½	83	83	102	102	102	102			
57		**E-12-20	20000	36	16000	S	Plf	Hyd	N	N	N	63	153	62	1½	1½	48	83	102	102	102	102			
58		**E-12-30	30000	36	22000	S	Plf	Hyd	N	N	N	93	180	94	5½	5½	60	108	108	108	108	108			
59		**E-12-40	40000	36	28000	S	Plf	Hyd	N	N	N	93	180	94	5½	5½	60	108	108	108	108	108			
60		**E-12-60	60000	36	38000	S	Plf	Hyd	N	N	N	93	180	94	5½	5½	60	108	108	108	108	108			

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

OR PLATFORM TRUCKS—continued

TURNING RADIUS (In.) With 40"x48" Pallet		ENGINE OR MOTOR	BATTERY	TRANSMISSION	SPEEDS With Capacity Load				TIRE SIZES		TOWING				
Outside (Tailwheel)	Inside				Truck				Drive Wheels	Steering Wheels	Previous Pull	Max. Drawbar Pull			
Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking	Make and Model	Horsepower	Normal Voltage	Amperes Hours	Conventional or Automatic	No. of Forward Speeds	No. of Reverse Speeds	Clutch Type	Forward (mph)	Reverse (mph)	Holding (rpm)	Lowering (rpm)	Dead Man Brake	Line Number
61	54	97 1/2	Kimble	32	204		4	4		5.0	5.0	30	40	Y	1
61	54	98 1/2	Kimble	32	204		4	4		5.0	5.0	30	40	Y	2
62	54	100 1/2	Kimble	32	350		4	4		5.0	5.0	25	40	Y	3
62	54	100 1/2	Kimble	32	350		4	4		5.5	5.5	30	35	Y	4
62	57	120	Kimble	32			4	4		5.5	5.5	30	35	Y	5
62	57	120	Kimble	32			4	4		4.5	4.5	34	40	Y	6
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	7
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	8
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	9
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	10
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	11
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	12
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	13
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	14
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	15
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	16
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	17
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	18
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	19
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	20
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	21
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	22
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	23
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	24
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	25
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	26
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	27
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	28
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	29
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	30
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	31
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	32
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	33
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	34
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	35
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	36
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	37
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	38
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	39
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	40
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	41
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	42
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	43
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	44
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	45
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	46
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	47
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	48
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	49
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	50
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	51
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	52
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	53
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	54
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	55
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	56
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	57
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	58
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	59
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	60
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	61
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	62
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	63
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	64
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	65
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	66
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	67
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	68
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	69
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	70
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	71
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	72
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	73
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	74
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	75
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	76
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	77
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	78
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	79
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	80
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	81
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	82
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	83
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	84
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	85
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	86
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	87
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	88
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	89
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	90
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	91
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	92
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	93
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	94
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	95
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	96
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	97
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	98
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	99
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	100
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	101
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	102
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	103
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	104
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	105
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	106
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	107
62	57	120	Kimble	32			4	4		4.5	4.5	32	40	Y	108
62	57	120	Kimble	32			4	4		4.5	4.5	32			

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED HIGH-LIFT FORK

Line Number	MAKE AND MODEL	MAXIMUM CAPACITY	Load (lb.)	Load Center (in.)	Service Weight (lb.) Excluding Battery	Operator Sits, Stands, Walks	Lift - Fork or Platform	MAST										OVERALL DIMENSIONS									
								Lifting Power	Tilt		Wheelbase (in.)	Face of Forks to Centerline of Front Axle	Lateral Center (in.)	Length				Height						Overall Including Carriage or Background			
									Telescopic	Rearward (Deg.)				Minimum	Maximum	At Truck Center	Under-clearance At Mast	Free Lift	Mast Collapsed		Mast Extended		Lifting				
										Minimum									Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum		
1	Hyster (Cont.)	**YC-40	4000	24	6305	S	Fk	Hyd	Y	10	5	50	12	24	78 1/2	30	60	5 1/2	2 1/2	30	70 1/2	100 1/2	106 1/2	166 1/2	166 1/2		
2		**HC-60	5000	24	7840	S	Fk	Hyd	Y	10	5	51	12	24	83	30	60	5 1/2	3	8	98 1/2	93 1/2	119	167	84	144	
3		**YT-50	4000	15	5900	S	Fk	Hyd	Y	11	5	35	16	15	88	30	54	4 1/2	3 1/2	10	65	101	96	168	72	144	
4		**XA-80	8000	24	10530	S	Fk	Hyd	Y	12	4	76	21	24	117 1/2	42	84	6	4 1/2	5	65 1/2	115	99	195	72	168	
5		**ZA-80	8000	24	11860	S	Fk	Hyd	Y	10	6	86	23	24	148 1/2	42	108	8	5 1/2	0	95	180	144	336	98	288	
6		**RT-100	10000	24	13600	S	Fk	Hyd	Y	10	6	100	25 1/2	24	153 1/2	42	108	12	7 1/2	0	97	192	146	336	98	288	
7		**RC-160	15000	24	19250	S	Fk	Hyd	Y	10	6	100	25 1/2	24	157 1/2	42	108	12	7 1/2	0	97	192	146	336	98	288	
8		**HC-160	16000	24	19730	S	Fk	Hyd	Y	10	6	100	25 1/2	24	158	42	108	12	7 1/2	0	97	192	146	336	98	288	
9		**SC-180	18000	24	20900	S	Fk	Hyd	Y	10	6	100	25 1/2	24	166 1/2	42	108	13	10	0	107	202	156	346	98	288	
10		**TC-200	20000	24	23403	S	Fk	Hyd	Y	10	6	100	25 1/2	24	166 1/2	42	108	13	10	0	107	202	156	346	98	288	
11	Kwik Mix	**S-10	1000	15	1560	St	Fk	Hyd	Y	N	N	34 1/2	12 1/2	21*	68	20	30	6	3	12	78	96	0	72	96		
12		**R-15	1500	15	2200	St	Fk	Hyd	Y	N	N	43	13	21*	81	20	30	6	3	N	86	104	0	84	104		
13	Lewis-Shopard	**EFFTT-1	1000	24	3320	St	Fk	Hyd	Y	10	3	44	12 1/2	24*	65 1/2	24	48	4 1/2	2 1/2	65	68	91	120	165	97	142	
14		**S9	1800	24	3355	St	Fk	Hyd	Y	10	3	44	12 1/2	24*	65 1/2	24	48	4 1/2	2 1/2	65	68	91	120	165	97	142	
15		**EFFTT-2	2000	24	3870	St	Fk	Hyd	Y	10	3	47	13 1/2	24*	67 1/2	24	48	4 1/2	2 1/2	65	68	91	120	165	97	142	
16		**E1	3000	24	5620	St	Fk	Hyd	Y	10	3	51	13 1/2	24*	75 1/2	24	48	4 1/2	2 1/2	65	68	91	120	165	97	142	
17		**EFFTT-3	3000	24	4936	St	Fk	Hyd	Y	10	3	51	13 1/2	24*	75 1/2	24	48	4 1/2	2 1/2	65	68	91	120	165	97	142	
18		**EFFTT-4	4000	24	5936	St	Fk	Hyd	Y	10	2	36	6 1/2	24*	55 1/2	24	48	3	2	11	59	83	99	147	82	130	
19		**JFTT-1	1000	24	2880	S	Fk	Hyd	Y	10	2	36	6 1/2	24*	55 1/2	24	48	3	2	14	59	83	99	147	82	130	
20		**JFTT-1.5	1500	24	3265	S	Fk	Hyd	Y	10	2	36	6 1/2	24*	55 1/2	24	48	3	2	14	59	83	99	147	82	130	
21		**JFTT-2	2000	24	3350	S	Fk	Hyd	Y	10	2	36	6 1/2	24*	55 1/2	24	48	3	2	14	59	83	99	147	82	130	
22		**E1SCTL	1000	24	3080	W	Fk	Hyd	Y	5	0	42	6 1/2	24*	46 1/2	24	48	3	2	11	59	83	100	148	82	130	
23		**E1SCTL	1500	24	3180	W	Fk	Hyd	Y	10	2	42	6 1/2	24*	56 1/2	24	48	3	14	59	83	99	147	82	130		
24		**E2SCTL	2000	24	3180	W	Fk	Hyd	Y	10	2	48	6 1/2	24*	62 1/2	24	48	3	18	59	83	96	144	76	124		
25		**E2SCHTL	2500	24	3210	W	Fk	Hyd	Y	10	2	54	6 1/2	24*	68 1/2	24	48	3	18	59	83	97	145	77	125		
26		**E3SCTL	3000	24	3410	W	Fk	Hyd	Y	10	2	66	6 1/2	24*	81 1/2	24	48	3	18	59	83	97	145	79	127		
27		**MN2SST	2000	24	2900	St	Fk	Hyd	Y	Y	Y	Y	Y	24*	33 1/2	30	48	2	3	11 1/2	59	83	97	145	79	127	
28		**MN3SST	3000	24	2900	St	Fk	Hyd	Y	Y	Y	Y	Y	24*	33 1/2	30	48	2	3	11 1/2	59	83	97	145	79	127	
29		**M3SOT	3000	24	2600	St	Fk	Hyd	Y	Y	Y	Y	Y	36*	31 1/2	36	48	2	3	30	59	83	92	144	73	129	
30		**M3SPT	3000	24	2575	St	Ptf	Hyd	Y	Y	Y	Y	Y	36*	31 1/2	24	54	2	3	25	59	83	92	144	73	129	
31		**E4SOT	4000	24	2750	W	Fk	Hyd	Y	Y	Y	Y	Y	32*	26 1/2	36	48	2	2	25	59	83	92	144	73	129	
32		**E4SOT	4000	24	2350	W	Fk	Hyd	Y	Y	Y	Y	Y	32*	26 1/2	36	48	2	2	30	59	83	92	144	73	129	
33		**E4SPT	4000	24	2125	W	Ptf	Hyd	Y	Y	Y	Y	Y	36*	26 1/2	36	54	2	2	30	59	83	92	144	73	129	
34	Lift Trucks	**KHL	2000		1405	W	Fk	HC	Y	Y	Y	Y	Y	36 1/2	24	42		1 1/2		53	83	81 1/2	141 1/2	60	120		
35		**KHC-18	1000	18		W	Fk	HC	Y	Y	Y	Y	Y	21 1/2	30	42				53	83			60	120		
36		**HHL	1000			W	Fk	HE	Y	Y	Y	Y	Y	21 1/2	30	42				53	83			60	120		
37		**HHL	2000			W	Fk	HE	Y	Y	Y	Y	Y	21 1/2	30	42				53	83			60	120		
38		**K3HL	3000	24	2700	W	Fk	Hyd	Y	N	N	73 1/2	24*	48	56	24	42	2	2	4	54 1/2	84 1/2	82	142	60	120	
39		**K2HCM	2000	12	3300	W	Ptf	Hyd	Y	N	N	39	6 1/2	48	56	24	42			4	54 1/2	84 1/2	82	142	60	120	
40		**K2HW	2000	18	2680	W	Ptf	Hyd	Y	N	N	Var								83	83			60	83		
41		**K4HW	4000	24	2800	W	Ptf	HE	Y	N	N	Var								83	83			60	130		
42		**K4HTW	2000	24	2750	W	Ptf	HE	Y	N	N	Var								83	83			60	127		
43		**K4HTW	3000	24	2650	W	Ptf	HE	Y	N	N	Var								83	83			60	129		
44		**K4HTW	4000	24	2650	W	Ptf	HE	Y	N	N	Var								83	83			60	128		
45		**K4HTP	3000	24	2850	W	Fk	HE	Y	N	N	Var								83	83			60	121		
46		**K4HTP	4000	24	2950	W	Fk	HE	Y	N	N	Var								83	83			60	121		
47		**K4HTP	4000	24	2950	W	Fk	HE	Y	N	N	Var								83	83			60	121		
48	MacDonald	**D	4500	24	12800	S	Fk	Hyd	Y	12	4	49 1/2	43 1/2						93*	90	124	156	226	132	200	241	
49	Market Forge	**PT-85	2400	24	2100	Sa	Fk	Hyd	opt	10	5	31 1/2	5 1/2	24*	55 1/2	6	72	5 1/2	2 1/2	63*	63	83	106	146	86	126	
50		**PT-63	2400	24	2100	Sa	Fk	Hyd	opt	10	5	39	5 1/2	36*	63 1/2	6	72	5 1/2	2 1/2	63*	63	83	106	146	86	126	
51		**TL-28	4000	24	2000	Sa	Ptf	Hyd	opt	N	N	56 1/2	30	24*	43 1/2	30	48	3	2 1/2	63*	63	83	106	146	86	126	
52	Mercury	**A-2304	2000	21	3800	S	Fk	Hyd	Y	10	3	33 1/2	13 1/2	24*	58 1/2	60	4 1/2			So	So	So	So	So	So	So	
53		**A-3404	2800	24	4100	S	Fk	Hyd	Y	10	3	40	13 1/2	24*	62 1/2	60	4 1/2			So	So	So	So	So	So	So	
54		**A-3444	3000	24	4350	S	Fk	Hyd	Y	10	3	44	13 1/2	24*	66 1/2	60	4 1/2			So	So	So	So	So	So	So	
55		**A-4304	4000	24	6100	S	Fk	Hyd	Y	10	4	48	15 1/2	30*	80 1/2	60	5			So	So	So	So	So	So	So	
56		**A-1484	4000	24	7000	St	Fk	Hyd	Y	15	5	48 1/2	17	30*	83 1/2	60	6 1/2			So	So	So	So	So	So	So	
57		**A-6304	6000	24	7300	S	Fk	Hyd	Y	10	4	54	16 1/2	24	8												

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

OR PLATFORM TRUCKS—continued

TURNING RADIUS (In.) With 40"x48" Pallet				ENGINE OR MOTOR		BATTERY	TRANSMISSION		SPEEDS With Capacity Load				TIRE SIZES		TOWING					
Outside Turning	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking	Make and Model	Horsepower	Normal Voltage	Ampere Hours	Conventional or Automatic	No. of Forward Speeds	No. of Reverse Speeds	Clutch Type	Truck				Dead Man Brake	Drive Wheels	Steering Wheels	Provision for Max. Drawbar Pull	Line Number
												Forward (mph)	Reverse (mph)	Holding (rpm)	Lowering (rpm)					
75	7 1/2	65	135	Wau FC-260A	35			CA	2	2	Fr	9.5	9.0	40	40	N	18x7x12 1/4	14x4 1/2x8	Y	2110
79	10	70	135	Wau FC-260A	35			CA	2	2	Fr	9.5	9.0	45	45	N	18x8x12 1/4	15 1/2x5x10	Y	2120
79	10	72	148	Wia VF-4	25			Conv	2	2	Fr	7.2	8.0	45	45	N	7.00 12	6.00 9	Y	1480
114	36 1/2	86	183	Her JX4C3	60			Conv	2	2	Fr	12.5	12.0	35	35	N	7.50 15	7.00 12	Y	2100
129	43 1/2	99	198	Her JX4D3	68			Conv	2	2	Fr	10.8	10.5	35	35	N	8.25 15	7.50 15	Y	2600
180	71	131	259	Int GRD 82 1/2				Conv	4	4	Fr	22.6	22.6	39	39	N	7.50 15	7.50 15	Y	8420
177	48	131	250	Her JXE3	91			Conv	4	4	Fr	23.5	23.0	40	40	N	8.25 20	8.25 20	Y	7480
177	48	131	250	Her JXE3	91			Conv	4	4	Fr	23.5	23.0	38 1/4	38 1/4	N	8.25 20	8.25 20	Y	7475
179	48	132	252	Her JXE3	91			Conv	4	4	Fr	23.5	23.0	38	38	N	8.25 20	8.25 20	Y	7475
179	48	132	252	Her JXE3	91			Conv	4	4	Fr	23.5	23.0	38	38	N	8.25 20	8.25 20	Y	7475
81	6	57		Wia AKN	6			Conv	1		Fr	4.5	4.5	30	30	Y	16 1/2x4	13x3 1/2	N	Opt
75	6	64		Wia AEN	8			Conv	1		Fr	6.0	6.0	30	30	Y	16 1/2x4	16x5	N	Opt
59	66 1/2	85	111 1/4	General Electric		30	22		4	4		5.0	5.0	46	45	Y	16 1/2x5	10x6	Y	1600
59	66 1/2	85	111 1/4	General Electric		38	23		4	4		5.0	5.0	50	45	Y	16 1/2x5	10x6	Y	1600
61	66 1/2	85	113 1/2	General Electric		30	24		4	4		5.0	5.0	40	45	Y	16 1/2x6	10x6	Y	1600
61	67 1/2	96	114 1/4	General Electric		30	25		4	4		5.0	5.0	27	45	Y	16 1/2x6	9x5	Y	1600
66 1/2	67 1/2	70	120	General Electric		32	26		4	4		5.0	5.0	27	45	Y	16 1/2x6	9x5	Y	1600
66 1/2	67 1/2	70	120	General Electric		32	26		4	4		5.0	5.0	26	45	Y	16 1/2x7	9x5	N	19
49 1/4	52 1/4	65	95 1/2	General Electric		12	23		2	2		4.0	4.0	16	25	Y	10x6 1/2	9x6 1/2	N	20
49 1/4	52 1/4	66	95 1/2	General Electric		12	23		2	2		4.0	4.0	15	25	Y	10x6 1/2	9x6 1/2	N	21
55 1/4	52 1/4	67	101 1/2	General Electric		12	26		2	2		4.0	4.0	13	25	Y	10x6 1/2	9x6 1/2	N	22
40 1/2	52 1/4	61	86 1/4	Auto-Lite		12	23		2	2		3.2	3.2	16	25	Y	10 1/2x6 1/2	9x6 1/2	N	23
50 1/2	52 1/4	69 1/2	96 1/4	Auto-Lite		12	23		2	2		3.1	3.1	10	25	Y	10 1/2x6 1/2	9x6 1/2	N	24
66 1/2	52 1/4	73 1/2	102 1/4	Auto-Lite		12	23		2	2		3.0	3.0	9	25	Y	10 1/2x6 1/2	9x6 1/2	N	25
62 1/2	52 1/4	76	108 1/4	Auto-Lite		12	23		2	2		2.9	2.9	11 1/2	25	Y	10 1/2x6 1/2	9x6 1/2	N	26
74 1/2	52 1/4	85	121 1/4	Auto-Lite		12	23		2	2		2.9	2.9	10	25	Y	10 1/2x6 1/2	9x6 1/2	N	27
69	50	61	69	General Electric		12	26		3	3		3.6	3.6	26	25	Y	10x6 1/2	4x3 1/2	N	28
69	50	61	69	General Electric		12	26		3	3		3.6	3.6	26	25	Y	10x6 1/2	3 1/2x5 1/2	N	29
69	50	61	69	General Electric		12	26		3	3		3.6	3.6	26	25	Y	10x6 1/2	4x3 1/2	N	30
69	50	61	69	General Electric		12	23		2	2		2.9	2.9	9	30	Y	10 1/2x6 1/2	4x3 1/2	N	31
65	49		63	General Electric		12	23		2	2		2.9	2.9	9	30	Y	10 1/2x6 1/2	3 1/2x5 1/2	N	32
63	49		63	General Electric		12	23		2	2		2.9	2.9	9	30	Y	10 1/2x6 1/2	4x3 1/2	N	33
63	49		63	General Electric		12	23		2	2		2.9	2.9	9	30	Y	10 1/2x6 1/2	4x3 1/2	N	33
		64 1/4	93 1/4				27		2	2		2.0	2.0	15			10x3	3 1/2x2 1/2		34
		62 1/2	83 1/2				27		2	2				15			6x2 1/2	3 1/2x2 1/2		35
		62 1/2	83 1/2				28		2	2				15			6x2 1/2	3 1/2x2 1/2		36
		64	92	Baldor 183-D	1	12	350		2	2		2.0	2.0	12	12	Opt	10x3 1/2		N	37
		58	86	Baldor 183-D	1	12	380		2	2		2.0	2.0	15	15		10x3 1/2		N	38
		56	87	Baldor 182-D	1	12	380		2	2		2.0	2.0	15	15		10x3 1/2		N	40
		56	87	Baldor 183-D	1	12	350		2	2		2.0	2.0	16	15		10x3 1/2		N	41
				Baldor 182-D	1	12	480		2	2		2.0	2.0	15	15		10x3 1/2		N	42
				Baldor 182-D	1	12	480		2	2		2.0	2.0	9	15		10x3 1/2		N	43
				Baldor 183-D	1	12	480		2	2		2.0	2.0	15	15		10x3 1/2		N	44
				Baldor 182-D	1	12	480		2	2		2.0	2.0	15	15		10x3 1/2		N	45
				Baldor 182-D	1	12	480		2	2		2.0	2.0	12	15		10x3 1/2		N	46
				Baldor 183-D	1	12	480		2	2		2.0	2.0	9	15		10x3 1/2		N	47
95	9	91		Chry					3	1	Fr	10.0	10.0				22x7x16	15 1/2x10		48
60	4	60	60	Baldor 183-D	1 1/2	12	400		48	48	N	4.0	4.0	24	48	Y	10 1/2x7	7x5	Y	500
60	4	60	60	Baldor 183-D	1 1/2	12	490		48	48	N	4.0	4.0	24	48	Y	10 1/2x7	7x5	Y	500
60	4	60	60	Baldor 183-D	1 1/2	12	490		48	48	N	4.0	4.0	24	48	Y	10 1/2x7	6 1/2x5	Opt	500
60		57 1/2		Own		(31)	(32)		3	3		8.1	8.1	26	42	Y	17 1/2x6	10 1/2x5	Y	52
66 1/2		59		Own		(31)	480		3	3		4.9	4.9	28	42	Y	17 1/2x6	10 1/2x5	Y	53
70		62		Own		(31)	450		3	3		4.9	4.9	26	42	Y	18x7	10x5	Y	54
79		70		Own		38	(33)		4	4		6.5	6.5	27	40	Y	21x7	15 1/2x6	Y	55
85		72		Own		38	(33)		4	4		4.9	4.9	22	35	Y	22x7	15x6	Y	56
84		73		Own		38	(33)		4	4		5.3	5.3	22	45	Y	21x8	15 1/2x6	Y	57
91		75		Own		35	(33)		4	4		4.8	4.8	22	35	Y	22x8	15x7	Y	58
91		75		Own		36	(33)		4	4		5.5	5.5	22	45	Y	22x9	16 1/2x7	Y	59
91	9	75	149	Own		36	(15)		4	4		5.3	5.3	22	45	Y	22x9	16 1/2x7	Y	60
90	10	80	155	Own		(31)	(34)		4	4		4.3	4.3	16		Y	16x4	6 1/2x5 1/2		61
				Own		(31)	(34)		4	4		4.3	4.3	16		Y	16x4	6 1/2x5 1/2		62
				Own		(31)	(34)		4	4		4.3	4.3	16		Y	16x4	6 1/2x5 1/2		63
				Own		(31)	(34)		4	4		4.3	4.3	16		Y	16x4	6 1/2x5 1/2		64
				Own		36	(33)		4	4		4.5	4.5	13		Y	20x4	10 1/2x5		65
				Own		36	(33)		4	4		4.5	4.5	13		Y	20x4	10 1/2x5		66
				Own		36	(33)		4	4		4.5	4.5	11		Y	20x5	10 1/2x6		67
				Own		36	(33)		4	4		4.5	4.5	11		Y	20x5	10 1/2x6		68
				Own		36	(33)		4	4		4.0	4.0	10		Y	20x6	10 1/2x6		69
57	0	53	69 1/4	Own	E	18		Aut	1	1	Fr	6.0	6.0	45	45	Y	17x4 1/2x12 1/4	8 1/2x4x4	N	70
61	0	57	69 1/4	Own	E	18		Aut	1	1	Fr	6.0	6.0	45	45	Y	17x4 1/2x12 1/4	8 1/2x4x4	N	71
61 1/4																				

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED HIGH-LIFT FORK

Line Number	MAKE AND MODEL	MAXIMUM CAPACITY		Service Weight (lb.) Excluding Battery	Operator's Seat, Steaks, Weights	Lift - Fork or Platform	Lifting Power	MAST					OVERALL DIMENSIONS														
								Telescopic	Tilt		Wheelbase (in.)	Face of Forks to Centerline of Front Axle	Lead Center (in.)	Length		Height											
									Rearward (Deg.)	Forward (Deg.)				Minimum	Maximum	At Truck Center	At Mast	Free Lift	Mast Collapsed	Mast Extended	Lifting	Carriage or Backguard					
		Load (lb.)	Load Center (in.)					Var	Var	Var	Var	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum				
1	Raymond - Cent.	11E2FT	2000	24	1900	St	Fk	Hyd	Y	N	N	54 1/2	24	31 1/2	30	42	2	1 1/2	44 1/2	83 1/2	N	132	N	128 1/2	N	183 1/2	
2		11E4ST	4000	24	3360	St	Fk	Hyd	Y	N	N	56 1/2	24	33 1/2	30	44	2	2	46 1/2	83 1/2	N	128	N	128	N	182 1/2	
3		11E2RT	2000	24	2750	St	Fk	Hyd	Y	N	N	54	24	34 1/2	30	44	2	2	40	83 1/2	N	118	N	115	N	162 1/2	
4		11E3RT	3000	24	4200	St	Fk	Hyd	Y	N	N	48 1/2	24	36 1/2	30	44	2	2	40	83 1/2	N	118	N	116	N	170 1/2	
5		11E4PT	4000	24	3400	St	Pft	Hyd	Y	N	N	67 1/2	24	38 1/2	30	48	2	2	40	83 1/2	N	128	N	120	N	146 1/2	
6		11E2P	2000	24	1800	St	Pft	Hyd	Y	N	N	54 1/2	24	29 1/2	30	48	2	2	85	83 1/2	N	71	N	65	N	86	
7		11E2PT	2000	24	1850	St	Pft	Hyd	Y	N	N	55 1/2	24	30 1/2	30	48	2	2	85	83 1/2	N	127	N	121	N	149 1/2	
8		11E4P	4000	24	1800	St	Pft	Hyd	Y	N	N	55 1/2	30	30 1/2	30	48	2	2	62 1/2	83 1/2	N	64	N	58	N	84 1/2	
9		11E2F	2000	24	1850	St	Fk	Hyd	Y	N	N	54 1/2	24	31 1/2	30	42	2	1 1/2	62 1/2	83 1/2	N	67 1/2	N	64	N	88 1/2	
10	Revolutor	1182.22	2800	24	1850	W	Fk	HC	Y	10	2	Var	38	Var	42	3 1/2	13	68	83	104	134	49	115				
11		**B2.23	3000	24	Var	W	Fk	HC	Y	10	2	Var	38	Var	42	3 1/2	13	68	83	104	134	49	115				
12		1152.12	4000	24	1700	W	Pft	HC	Y	10	2	Var	36	36	60	3 1/2	13	68	83	104	134	49	115				
13	Silent Molest	FK5		24	14500	S	Fk	Hyd	Y	12	4	108	23 1/2	24	150	42	72	16	9	108	162	168	270	120	216		
14		FK7 1/2		24	19000	S	Fk	Hyd	Y	12	4	108	28	24	160	51	96	16	9	108	162	168	270	120	216		
15		FK10		24	20000	S	Fk	Hyd	Y	12	4	132	28	24	190	51	120	16	9	120	174	180	282	120	216		
16		FK15		30	30000	S	Fk	Hyd	Y	12	4	148	32	30	226	72	120	16	9	120	183	180	243	120	180		
17	Towmotor	**350	1500	15	3095	Se	Fk	Hyd	Y	10	3	5	11 1/2	151	60 1/2	30 1/2	5	2 1/2	25 1/2	65 1/2	83 1/2	89 1/2	137 1/2	74 1/2	122 1/2	140 1/2	
18		**350	2000	15	3405	Se	Fk	Hyd	Y	10	3	5	11 1/2	151	60 1/2	30 1/2	5	2 1/2	25 1/2	65 1/2	83 1/2	89 1/2	137 1/2	74 1/2	122 1/2	140 1/2	
19		**350	2000	24	4130	Se	Fk	Hyd	Y	10	3	5	11 1/2	241	61 1/2	30 1/2	5	2 1/2	25 1/2	65 1/2	83 1/2	89 1/2	137 1/2	74 1/2	122 1/2	140 1/2	
20		**350	3000	15	4835	Se	Fk	Hyd	Y	10	3	5	12 1/2	151	71 1/2	30 1/2	8 1/2	2 1/2	25 1/2	65 1/2	101 1/2	89 1/2	161 1/2	74 1/2	146 1/2	164 1/2	
21		**420	4000	15	5500	Se	Fk	Hyd	Y	10	3	5	12 1/2	151	71 1/2	30 1/2	8 1/2	2 1/2	25 1/2	65 1/2	101 1/2	89 1/2	161 1/2	74 1/2	146 1/2	164 1/2	
22		**460	4000	24	6210	Se	Fk	Hyd	Y	10	3	5	12 1/2	241	79 1/2	38 1/2	7 1/2	2 1/2	25 1/2	65 1/2	101 1/2	89 1/2	161 1/2	74 1/2	146 1/2	164 1/2	
23		**400-P	2000	24	4510	Se	Fk	Hyd	Y	12	3	40	15 1/2	241	74	30 1/2	7 1/2	4 1/2	21 1/2	65 1/2	83 1/2	91 1/2	139 1/2	73 1/2	121 1/2	140 1/2	
24		**500	5000	24	7235	Se	Fk	Hyd	Y	10	3	50	12 1/2	241	82 1/2	38 1/2	7 1/2	4 1/2	25 1/2	65 1/2	101 1/2	89 1/2	161 1/2	74 1/2	146 1/2	164 1/2	
25		**500-P	4000	24	6995	Se	Fk	Hyd	Y	10	3	50	18 1/2	241	88 1/2	38 1/2	9 1/2	4 1/2	25 1/2	65 1/2	101 1/2	89 1/2	161 1/2	74 1/2	146 1/2	164 1/2	
26		**LT-40	4000	24	7405	Se	Fk	Hyd	Y	10	5	60	20 1/2	241	106 1/2	42 1/2	12 1/2	9	13 1/2	69 1/2	87 1/2	104 1/2	140 1/2	73 1/2	109 1/2	147 1/2	
27		**LT-40	5000	24	8025	Se	Fk	Hyd	Y	10	5	60	20 1/2	241	106 1/2	42 1/2	12 1/2	9	13 1/2	69 1/2	87 1/2	104 1/2	140 1/2	73 1/2	109 1/2	147 1/2	
28		**LT-40	6000	24	8895	Se	Fk	Hyd	Y	10	5	60	20 1/2	241	106 1/2	42 1/2	12 1/2	9	13 1/2	69 1/2	87 1/2	104 1/2	140 1/2	73 1/2	109 1/2	147 1/2	
29		**LT-50	5000	20	7330	Se	Fk	Hyd	Y	10	3	50	15 1/2	201	88	38 1/2	7	4 1/2	20 1/2	65 1/2	104 1/2	99 1/2	171 1/2	74 1/2	146 1/2	178 1/2	
30		**LT-56	6000	24	8415	Se	Fk	Hyd	Y	10	3	56	15 1/2	241	94	42 1/2	8	4 1/2	20 1/2	65 1/2	104 1/2	99 1/2	171 1/2	74 1/2	146 1/2	178 1/2	
31		**LT-62	7000	24	9420	Se	Fk	Hyd	Y	10	3	62	16 1/2	241	101	42 1/2	8 1/2	4 1/2	20 1/2	67 1/2	106 1/2	104 1/2	176 1/2	74 1/2	146 1/2	178 1/2	
32		**LT-72	10000	24	12080	Se	Fk	Hyd	Y	10	8	72	16 1/2	241	111 1/2	42 1/2	8 1/2	3 1/2	17 1/2	71 1/2	86 1/2	106 1/2	136 1/2	77 1/2	107 1/2	138 1/2	
33		**500	18000	24	16300	Se	Fk	Hyd	Y	10	3	90	20	241	134	42 1/2	8 1/2	3	22 1/2	80 1/2	95 1/2	117 1/2	147 1/2	76 1/2	106 1/2	148 1/2	
34	Transitter	190	1000	15	2200	S	Fk	Hyd	Y	10	4	44	14	15	70	30	48	4	4	8 1/2	54	78	80	128	60	180	128
35		200	2000	15	3100	S	Fk	Hyd	Y	10	4	44	14	15	70	30	48	4	4	8 1/2	54	78	80	128	60	180	128
36		250	2500	24	3500	S	Fk	Hyd	Y	10	4	44	14	24	74	30	48	4	4	8 1/2	54	78	80	128	60	180	128
37		300	3000	15	4400	S	Fk	Hyd	Y	10	4	44	15	15	74	30	48	4	4	10	56	82	84	132	60	180	132
38		300W	2000	15	3300	S	Fk	Hyd	Y	10	4	44	14	15	70	30	48	4	4	8 1/2	54	78	80	128	Sp	Sp	128
39		280W	2000	24	3700	S	Fk	Hyd	Y	10	4	44	14	24	70	30	48	4	4	8 1/2	54	78	80	128	Sp	Sp	128
40		300W	3000	15	4800	S	Fk	Hyd	Y	10	4	44	15	15	74	30	48	4	4	10	56	82	84	132	Sp	Sp	132
41		400	4000	24	6500	S	Fk	Hyd	Y	14	4	54	18 1/2	24	95	30	54	5	4 1/2	72 1/2	83	95	107	167	84	144	144
42		500	5000	24	7500	S	Fk	Hyd	Y	14	4	54	18 1/2	24	98	30	54	5	4 1/2	72 1/2	83	95	107	167	84	144	144
43	Truck-Man	**W40		24	6560	S	Fk	Hyd	Y	10	3	48	15	30 1/2	79 1/2	38 1/2	8 1/2	4	45 1/2	68	90	104	150	90	120	150 1/2	
44	(Knickerbocker)	**V40		24	6680	S	Fk	Hyd	Y	7	3	62 1/2	19 1/2	30 1/2	99	38 1/2	12 1/2	4	45 1/2	68	90	104	150	90	120	150 1/2	
45	Yale & Towne	**K81AT-10	1000	24	3065	S	Fk	Hyd	Y	10	3	38 1/2	11 1/2	24 1/2	58 1/2	38 1/2	5	2 1/2	18 1/2	60	68	105 1/2	121 1/2	92	108	129	
46		**K81AT-10	1000	24	3138	S	Fk	Hyd	Y	10	3	38 1/2	11 1/2	24 1/2	58 1/2	38 1/2	5	2 1/2	18 1/2	60	68	105 1/2	121 1/2	92	108	129	
47		**K81AT-10	1000	24	3065	S	Fk	Hyd	Y	10	3	38 1/2	11 1/2	24 1/2	58 1/2	38 1/2	5	2 1/2	18 1/2	60	68	105 1/2	121 1/2	92	108	129	
48		**K81AT-10	1000	24	3138	S	Fk	Hyd	Y	10	3	38 1/2	11 1/2	24 1/2	58 1/2	38 1/2	5	2 1/2	18 1/2	60	68	105 1/2	121 1/2	92	108	129	
49		**K81AT-15	1500	24	3700	S	Fk	Hyd	Y	10	3	38 1/2	11 1/2	24 1/2	58 1/2	38 1/2	5	2 1/2									

OR PLATFORM TRUCKS—continued

For Abbreviations and Symbols see Pages 86 and 87

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED HIGH-LIFT FORK

Line Number	MAKE AND MODEL	MAXIMUM CAPACITY	Load Center In.	Service Weight (lb.) Excluding Battery	Operator Sits, Stands, Walks	Lift Fork or Platform	Lifting Power	MAST										OVERALL DIMENSIONS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
								Tilt					Length					Height					Overall Including Carriage or Backguard																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

OR PLATFORM TRUCKS—continued

TURNING RADIUS (In.) With 40"x48" Pallet				ENGINE OR MOTOR		BATTERY		TRANSMISSION				SPEEDS With Capacity Load				TIRE SIZES		TOWING			
Outside Tailswing	Inside	Intersection Aisle Width	Minimum Aisle for Right Angle Stacking	Make and Model	Horsepower	Normal Voltage	Ampere Hours	Conventional or Automatic	No. of Forward Speeds	No. of Reverse Speeds	Clutch Type	Forward (mph)	Reverse (mph)	Hoisting (fpm)	Lowering (fpm)	Dead Man Brake	Drive Wheels	Steering Wheels	Provision for	Max. Drawbar Pull	Line Number
70		68	131	OGE		4	500	DR	4	4		6.5	6.5	24	48	Y	17½x6x12½	14x6½x8	N		1
75		72	139	OGE		36	500	DR	4	4		5.0	5.0	24	60	Y	21x6x15	16½x6x11½	Y		2
70		68	131	OGE		4	500	DR	4	4		6.5	6.5	24	48	Y	17½x6x12½	14x6½x8	N		3
75		72	139	OGE		36	500	DR	4	4		5.0	5.0	24	60	Y	21x6x15	16½x6x11½	N		4
70		68	131	OGE		36	500	DR	4	4		5.0	5.0	24	60	Y	17½x6x12½	14x6½x8	N		5
75		72	139	OGE		36	500	DR	4	4		5.0	5.0	24	60	Y	21x6x15	16½x6x11½	N		6
75		72	139	OGE		36	500	DR	4	4		5.0	5.0	23	60	Y	21x6x15	16½x6x11½	N		7
75		72	139	OGE		36	500	DR	4	4		5.0	5.0	23	60	Y	21x6x15	16½x6x11½	N		8
82		75	146	OGE		36	650	DR	4	4		5.0	5.0	22	60	Y	21x7x15	16½x6x11½	N		9
82		75	146	OGE		36	650	DR	4	4		5.0	5.0	22	60	Y	21x7x15	16½x6x11½	N		10
84		78	146	OGE		36	650	DR	4	4		5.0	5.0	21	60	Y	21x8x15	16½x6x11½	N		11
86		77	150	OGE		36	700	DR	4	4		5.0	5.0	16	50	Y	21x8x15	16½x6x11½	N		12
91		81	156	OGE		36	700	DR	4	4		5.0	5.0	15	50	Y	22x8x16	16½x7x11½	N		13
91		84	157	OGE		36	800	DR	4	4		5.0	5.0	12	50	Y	22x12x16	16½x7x11½	N		14
151		122	189	Electric Specialty				DR	4	4						Y	22x14	22x14	N		15
73	23	72	136	Electric Specialty				DR	4	4		5.0	5.0	21	45	Y	20x8	15x5	N		16
84	27	75	147	Electric Specialty				DR	4	4		6.0	6.0	23	45	Y	20x7x16	15x6x11½	N		17
85	25	77	148	Electric Specialty				DR	4	4		5.0	5.0	13	28	Y	22x8x16	15x6x11½	N		18
87	28	80	153	Electric Specialty				DR	4	4		5.0	5.0	12	28	Y	22x8x16	15x6x11½	N		19
94	32	82	158	Electric Specialty				DR	4	4		5.0	5.0	10	16	Y	22x10x16	15x7x11½	N		20
104	33	93	174	Electric Specialty				DR	4	4		5.0	5.0	10	16	Y	22x14	15x8	N		21
104	33	93	174	Electric Specialty				DR	4	4		4.5	4.5	8	12	Y	22x16	22x10	N		22
108	32	97	175	Electric Specialty				DR	4	4		4.5	4.5	8	12	Y	22x16	22x10	N		23
108	32	97	173	Electric Specialty				DR	4	4		4.5	4.5	8	12	Y	22x16	22x10	N		24
108	3	97	175	Electric Specialty				DR	4	4		4.5	4.5	8	12	Y	22x16	22x10	N		25
119	4	104	185	Electric Specialty				DR	4	4		4.5	4.5	8	10	Y	22x18	22x10	N		26
119	4	104	185	Electric Specialty				DR	4	4		4.5	4.5	10	35	Y	36x12	22x10	N		27
154	3	135	225	Electric Specialty				DR	4	4		4.5	4.5	10	35	Y	36x12	22x10	N		28
154	3	135	225	Electric Specialty				DR	4	4		4.5	4.5	10	35	Y	36x12	22x10	N		29
154	3	135	225	Electric Specialty				DR	4	4		4.5	4.5	10	35	Y	36x12	22x10	N		30
156	3	138	226	Electric Specialty				DR	4	4		4.5	4.5	10	35	Y	36x12	22x10	N		31
184	3	167	255	Electric Specialty				DR	4	4		3.0	3.0	10	35	Y	36x12	36x12	N		32
185	3	168	256	Electric Specialty				DR	4	4		3.0	3.0	10	35	Y	36x12	36x12	N		33
185	3	168	256	Electric Specialty				DR	4	4		3.0	3.0	10	35	Y	36x12	36x12	N		34
87	39	63	133	Electric Specialty				DR	4	4		5.0	5.0	16	30	Y	20x5		N		35
98	43	66	152	Electric Specialty				DR	4	4		5.5	5.5	14	25	Y	20x6x16		N		36
105	46	71	157	Electric Specialty				DR	4	4		5.0	5.0	13	22	Y	20x6		N		37
102	45	67	154	Electric Specialty				DR	4	4		4.5	4.5	6	11	Y	20x6		N		38
124½	64½	76	182	Electric Specialty				DR	4	4		4.5	4.5	6	11	Y	20x6		N		39
125½	66	76	183	Electric Specialty				DR	4	4		4.5	4.5	6	11	Y	20x6		N		40
126	64	76	184	Electric Specialty				DR	4	4		4.5	4.5	6	11	Y	20x7		N		41
164	9½	95	215	Electric Specialty				DR											N		42
137		105	165	Electric Specialty				DR											N		43
137		113	167	Electric Specialty				DR											N		44
41		61	96	AL MCP4002	1	12	450	DR	2	2		2.4	2.4	8	Reg	Y	10½x5	10½x5	N		45
45		61	130	AL MCP4002	1	12	450	DR	2	2		2.4	2.4	8	Reg	Y	10½x5	10½x5	N		46
63		63	108	AL MCP4002	1	12	450	DR	2	2		2.4	2.4	9	Reg	Y	10½x5	10½x5	N		47
54		65	108	AL MCP4002	1	12	450	DR	2	2		2.3	2.3	9	Reg	Y	10½x5	10½x5	N		48
60½		66	116	AL MCP4002	1	12	450	DR	2	2		2.3	2.3	9	Reg	Y	10½x5	10½x5	N		49
64		66½	119	AL MCP4002	1	12	450	DR	2	2		2.2	2.2	8	Reg	Y	10½x5	10½x5	N		50
64		68½	119	AL MCP4002	1	12	450	DR	2	2		2.2	2.2	8	Reg	Y	10½x5	10½x5	N		51
72		73	128	AL MCP4002	1	12	450	DR	2	2		2.1	2.1	13	Reg	Y	10½x5	10½x5	N		52
72		73	128	AL MCP4002	1	12	450	DR	2	2		2.1	2.1	13	Reg	Y	10½x5	10½x5	N		53
67½		67½	87	AL MCP4002	1	12	450	DR	2	2		2.3	2.3	15	Reg	Y	10x5	10x5	N		54
67½		67½	87	AL MCP4002	1	12	450	DR	2	2		2.3	2.3	15	Reg	Y	10x5	10x5	N		55
76½		75	92½	AL MCP4002	1	12	450	DR	2	2		2.0	2.0	6	Reg	Y	10x5	10x5	N		56
76½		75	92½	AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		57
76½		75	92½	AL MCP4002	1	12	450	DR	2	2		2.0	2.0	5	Reg	Y	10x5	10x5	N		58
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	8	Reg	Y	10x6½x5	10x6½x5	N		59
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		60
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		61
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		62
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		63
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		64
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		65
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		66
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		67
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		68
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		69
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		70
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		71
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		72
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		73
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		74
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		75
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		76
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		77
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		78
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		79
				AL MCP4002	1	12	450	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		80

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED HIGH-LIFT FORK

Line Number	MAKE AND MODEL	MAXIMUM CAPACITY		Service Weight (lb.) — Excluding Battery	Operator — Sit, Stand, Walk	Lift — Fork or Platform	Lifting Power	MAST					OVERALL DIMENSIONS													
		Load (lb.)	Load Center (in.)					Telescopic	Tilt		Wheelbase (in.)	Face of Forks to Centerline of Front Axle	Load Center (in.)	Length			Height									
									Rainward (Deg.)	Forward (Deg.)				Less Forks	Minimum	Maximum	At Truck Center	At Mast	Free Lift	Mast Collapsed		Mast Extended		Lifting		Overall — Including Carriage or Backguard
																				Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	
1	Yale & Towne (Continued)	1500	15	3155	W	Fk	Hyd	Y	10	2	42	6 1/2	24*	57 1/2	30 1/2	2 1/2	2 1/2	18	68	90	124	168	100	144	188	
2	**M16ATF	2000	15	3180	W	Fk	Hyd	Y	18	2	48	6 1/2	24*	63 1/2	30 1/2	2 1/2	2 1/2	18	68	90	124	168	100	144	188	
3	**M25ATF	2500	24	3480	W	Fk	Hyd	Y	18	2	51	6 1/2	24*	66 1/2	30 1/2	2 1/2	2 1/2	18	68	90	124	168	100	144	188	
4	**M30ATF	3000	24	3805	W	Fk	Hyd	Y	18	2	60	7 1/2	24*	76	30 1/2	2 1/2	2 1/2	18	68	90	124	168	100	144	188	
5	††M30HLTP	3000	24	2580	W	Fk	Hyd	Y			67 1/2	21*	45 1/2	42 1/2	1 1/2	1 1/2	22	68	83	112	142	90	120	142		
6	††M40HLTP	4000	24	2740	W	Fk	Hyd	Y			67 1/2	21*	45 1/2	42 1/2	1 1/2	1 1/2	22	68	83	112	142	90	120	142		
7	**KM31A-4	4000	24	5800	St	Fk	Hyd	Y	10	3	47	15	24*	95	36 1/2	5 1/2	5 1/2	55	68	83	123	153	89	119	153	
8	**KM31A-6	6000	24		St	Fk	Hyd	Y	10	3	47	15	24*	95	36 1/2	5 1/2	5 1/2	55	68	83	123	153	89	119	153	
9	††RSEAT-2	2000	15		St	Fk	Hyd	Y	4		52 1/2	28 1/2	24 1/2	29 1/2	36 1/2	2 1/2	2 1/2		83		178		126			
10	††RSEAT-3	2000	15		St	Fk	Hyd	Y	4		40 1/2	24 1/2	27 1/2	30 1/2	36 1/2	2 1/2	2 1/2		83				126			
11	††RSEAT-3	3000	24		St	Fk	Hyd	Y	4	0	40 1/2	12 1/2	24 1/2	54 1/2	30	48	3	3	19 1/2	83 1/2			126 1/2			
12	KQAS1AT-30	3000	24	6700*	S	Fk	Hyd	Y	11 1/2	6 1/2	47	15 1/2	24 1/2	78 1/2	36 1/2	5 1/2	5 1/2	17	83 1/2					130*		
13	KQAS1AT-40	4000	24	7300*	S	Fk	Hyd	Y	11 1/2	6 1/2	47	15 1/2	24 1/2	80 1/2	36 1/2	5 1/2	5 1/2	17	83 1/2					130*		
14	KQAS1AT-50	5000	24	8300*	S	Fk	Hyd	Y	11 1/2	6 1/2	47	15 1/2	24 1/2	83 1/2	36 1/2	5 1/2	5 1/2	17	83 1/2					130*		
15	KQAS1AT-60	6000	24	9800*	S	Fk	Hyd	Y	11 1/2	6 1/2	50	15 1/2	24 1/2	86 1/2	36 1/2	5 1/2	5 1/2	17	83 1/2					130*		
16	KQAS1AT-70	7000	24	9800*	S	Fk	Hyd	Y	11 1/2	6 1/2	50	15 1/2	24 1/2	89 1/2	36 1/2	5 1/2	5 1/2	26	83 1/2					130*		
17	KQAS1AT-80	8000	24	10200*	S	Fk	Hyd	Y	11 1/2	6 1/2	55	16 1/2	24 1/2	94 1/2	36 1/2	5 1/2	5 1/2	28	83 1/2					118*		

SYMBOLS & ABBREVIATIONS

- * — Including battery.
- † — Standard.
- †† — Without load.
- — Maximum.
- — With 45° load.
- † — With battery and counterweight.
- †† — Including platform or forks.
- — Automatic transmission available on gasoline or L.P.G. models.
- — With 36" x 36" load.
- — Minimum.

- — For minimum standard lift.
- — Counter balanced.
- †† — Non-counter balanced.
- † — With 60° load.
- — Combination steering and drive wheel.
- — Load wheels.
- — Counter balancing optional.
- (1) — 60 to 72.
- (2) — 36x12 or 36x16.
- (3) — 48 to 60.
- (4) — 30 to 36.
- (5) — 24 to 36.
- (6) — 350 to 600.

- (7) — Hercules I.X.B. gasoline engine and Baker 18-2400 electric motor.
- (8) — Gasoline engine, 34; electric motor, 7-8.
- (9) — 36 to 48.
- (10) — 250 to 450.
- (11) — 350 to 500.
- (12) — 400 to 550.
- (13) — 450 to 600.
- (14) — 500 to 550.
- (15) — 600 to 700.
- (16) — 650 to 750.
- (17) — 750 to 800.

- (18) — 24 to 32.
- (19) — 32 to 36.
- (20) — 36 to 39.
- (21) — 48 to 72.
- (22) — 250 to 300.
- (23) — 300 to 360.
- (24) — 350 to 420.
- (25) — 375 to 480.
- (26) — 450 to 540.
- (27) — 300 to 485.
- (28) — 130 to 250.
- (29) — 340 to 500.
- (30) — 2 standard; 3 optional.
- (31) — 28 to 30.

- (32) — 350 to 450.
- (33) — 450 to 550.
- (34) — 300 to 350.
- (35) — Hercules, Continental or Chrysler.
- (36) — 50 and 10.
- (37) — 70 and 14.
- (38) — 64 and 20.
- (39) — 64 1/2 and 20.
- (40) — 96 and 20.
- (41) — 53 1/2 to 59.
- (42) — 50 to 55.
- (43) — 61 1/2 to 79 1/2.
- (44) — 62 1/2 to 80 1/2.

POWERED NON-LIFT

Line Number	MAKE AND MODEL		Rated Capacity (lbs.)	Service Weight (lbs.)	OPERATOR		Motor Power	Frame Type	Controls & Steering	OVERALL TRUCK DIMENSIONS (ins.)			PLATFORM DIMENSIONS (ins.)			No. of Drive Wheels	No. of Steering Wheels	TIRES				
					Rider or Walks	Sit or Stand				Width	Length	Height	Wheelbase	Length	Width			Height from Ground	ON DRIVE WHEELS		STEERING WHEELS	
1	Automatic	FP-20	2000	1935	R	S	EM	Str	1	40	109	60	60 1/2	40	14 1/2	2	1	Cu	14x4 1/2	Cu	14x4 1/2	
2		HN-2	4000	3730	R	St	EM	Str	1	39	114 1/2	65	64	38	12 1/2	2	4	So	22x4 1/2	So	10x6	
3		HN-3	6000	4700	R	St	EM	Str	1	41	118 1/2	65	64	41	12 1/2	2	4	So	20x6	So	10x6	
4		EN-2	4000	4000	R	St	EM	Str	1	46	105 1/2	55	84	48	24	2	4	So	22x4 1/2	So	22x4 1/2	
5		EN-3	6000	4255	R	St	EM	Str	1	45	107	53	84	45	22 1/2	2	4	So	20x5	So	20x5	
6	Baker-Rauling	PG-040-01	2000	2800	R	S	GE	Str	1	60	160	100	108	60	26	2	2	P	6.00 9	P	6.00 9	
7	Crescent	PDB-4	4000	4800	R	St	EM	Dr	1	42	118 1/2	52 1/2	67	60	42	12	2	4	SC	20x6x16	So	10 1/2 x 6 1/2
8		HDB-6	6000	5600	R	St	EM	Dr	1	42	118 1/2	52 1/2	67	60	42	12	2	4	SoC	20x6x16	So	10 1/2 x 6 1/2
9		RSE-10	10000	3900	R	St	EM	Str	1	42	112 1/2	53 1/2	66 1/2	90	42	26	2	4	SoC	22x6x16	SoC	22x6x16
10	Elwell-Parker	FH-6	6000	2900	R	St	E-G	Str	1	42 1/2	124 1/2	58	60	64	41	12 1/2	2	4	So	22x6	So	10x6
11		WH-6	6000	2975	R	St	E-G	Str	1	42 1/2	146 1/2	58	78	86	41	17 1/2	2	4	So	22x6	So	15x6
12		IE	6000	2475	R	St	E-G	Str	1	40	111 1/2	58 1/2	60	84	40	25	2	4	So	20x3 1/2	So	20x5
13		SE	4000	2650	R	St	E-G	Str	2	45	150	84	83 1/2	136 1/2	44	34	2	4	So	27x3 1/2	So	27x3 1/2
14	Hyster	Cargo Truck	4000	1810	R	St	GE	Str	1	42	103 1/2	58	73 1/2	60	42	7 1/2	1	2	Cu	16 1/2 x 4	So	6x6
15	Kalamazoo	2900	2000	1160	R	St	GE	Str	1	42	96	48	48 1/2	54	42	18 1/2	2	1	P	5.00 16	P	5.00 16
16	Kwik-Mix	510	1500	980	R	St	GE	Str	1	34	80	48	43 1/2	48	34	20	2	2	P	5.00 16	P	12x4
17		R18	2000	1100	R	St	GE	Str	1	36	94	48	43 1/2	54	34	22	2	2	P	5.00 16	P	5.00 16
18	Market Forge	Freight Truck	6000	950*	R	Set	E-G	Str	1	36	92 1/2	45	55 1/2	57	36	13 1/2	1	1	Cu	10 1/2 x 7	Cu	10x5
19	Mercury	A-823	2000	1290*	R	S	EM	Str	1	40	111 1/2	51 1/2	63	51	40	22	2	1	PC	6	PC	7
20		A-1009	3000	2900*	R	St	EM	Str	1	33	82 1/2	46 1/2	40 1/2	62	33	24	2	2	So	16x4	So	16x4
21		A-1014	4000	2700*	R	St	EM	Str	1	46	112	56	61	88	46	27 1/2	2	2	So	20x4	So	20x4
22		A-1014	6000	2800*	R	St	EM	Str	1	46	112	56	61	88	46	27 1/2	2	2	So	20x5	So	20x5
23		A-1015	4000	2800*	R	St	EM	Dr	1	41	120 1/2	56	71	72	41	11 1/2	2	2	So	20x4	So	10 1/2 x 5
24		A-1015	6000	2700*	R	St	EM	Dr	1	41	120 1/2	56	71	72	41	11 1/2	2	2	So	20x5	So	10 1/2 x 6
25	Yale & Towne	K20-8	6000	2535	R	St	E-G	Dr	1	42	108 1/2	51	61	66 1/2	42	25 1/2	2	4	Cu	20x5	Cu	20x5
26		FM20	2000	1225	R	S	E-G	Str	1	40	96	62	96	42	22	2	1	PC	18x5 1/2	PC	18x5 1/2	
27		K32	4000	3300	R	St	E-G	Str	2	45	178	84	126 1/2	148	45	12	2	4	So	27x3 1/2	So	27x3 1/2
28		K38	4000	3300	R	St	E-G	Dr	2	45	178	84	126 1/2	148	45	34	2	4	So	27x3 1/2	So	27x3 1/2

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

OR PLATFORM TRUCKS—concluded

TURNING RADIUS (In.) With 40"x48" Pallet				ENGINE OR MOTOR		BATTERY		TRANSMISSION			SPEEDS With Capacity Load					TIRE SIZES		TOWING			
Outside (Tailswing)	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking	Make and Model	Horsepower	Normal Voltage	Amperes Hours	Conventional or Automatic	No. of Forward Speeds	No. of Reverse Speeds	Clutch Type	Truck				Dead Man Brake	Drive Wheels	Steering Wheels	Provision for—	Max. Drawbar Pull	Line Number
												Forward (mph)	Reverse (mph)	Holding (rpm)	Lowering (rpm)						
54		54	92½	AL MCP4002	1	12	600		2	2		2.4	2.4	9	Reg	Y	10x6½x5	10x6½x5	N		1
60½		57	99	AL MCP4002	1	12	600		2	2		2.3	2.3	9	Reg	Y	10x6½x5	10x6½x5	N		2
64		59	102½	AL MCP4002	1	12	600		2	2		2.2	2.2	8	Reg	Y	10x6½x5	10x6½x5	N		3
72		63	112	AL MCP4002	1	12	600		2	2		2.1	2.1	13	Reg	Y	10x6½x5	10x6½x5	N		4
77		67	83	AL MCP4002		12	600	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		5
77		67	83	AL MCP4002		12	600	DR	2	2		2.0	2.0	14	Reg	Y	10x5	10x5	N		6
104		74	138	Electric Specialty		4	500	DR	4	4		6.0	6.0	20	45	Y	20x7	17x5	Y		7
				Electric Specialty		4	500	DR	4	4		6.0	6.0	20	45	Y	20x7	17x5	Y		8
		64	87	Kim ET423	1½	12	600	DR	3	3		3.4	3.4	25			10x5	10x5	N		9
		64	82	Kim ET423	1½	12	600	DR	3	3		3.7	3.7	17			10x5	10x5	N		10
		64	82	Kim ET423	1½	12	600		3	3		3.7	3.7	14		Y	10x5	10x5	N		11
75		56	127	Chrysler	65			Aut			Fr	8.5	8.5	65	60	N	21x6x15	16½x8x11½	Y	2052	12
77		67	129	Chrysler	65			Aut			Fr	8.5	8.5	63	60	N	21x6x15	16½x8x11½	Y	2045	13
79		69	131	Chrysler	65			Aut			Fr	8.5	8.5	60	60	N	21x7x15	16½x8x11½	Y	2030	14
83		71	135	Chrysler	65			Aut			Fr	8.5	8.5	45	60	N	21x8x15	16½x8x11½	Y	2018	15
85		73	138	Chrysler	65			Aut			Fr	8.5	8.5	45	60	N	21x8x15	16½x8x11½	Y	2007	16
91		76	143	Chrysler	65			Aut			Fr	8.5	8.5	54	60	N	22x8x16	16½x7x11½	Y	1900	17

45) —36 to 45.

46) —Two standard; four optional.

47) —Diesel engine, Continental G1D-157.

48) —Load length plus 24".

49) —Diesel engine, Continental HD-260.

50) —Gasoline or LPG.

51) —Gasoline, diesel or LPG.

52) —30 to 32.

53) —51, 63 and 75.

54) —500 to 600.

55) —550 to 650.

56) —International U123 or Continental Y112.

57) —International U123 or Continental F162.

58) —International, 27; Continental, 41.

59) —Gasoline, 54; Diesel, 57.

60) —Gasoline, 5; Diesel, 12.

AB) —Automotive regenerative brake.

AC) —Allis-Chalmers.

AL) —Electric Auto-Lite Co.

Aut) —Automatic.

CA) —Conventional and automatic.

CF) —Conventional or fluid coupling.

CFA) —Conventional, fluid coupling or automatic.

Ch) —Chalmers.

Chry) —Chrysler Corp.

Cont) —Continental Motors Corp.

Conv) —Conventional.

DB) —Dynamic brake.

DR) —Double reduction gear drive.

Ele) —Electric.

FE) —Friction and electric.

FF) —Friction and fluid.

FF) —Friction and fluid.

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FF) —Friction and fluid.

FF) —Friction and fluid.

Flr) —Fork or ram.

Fr) —Friction.

FR) —Fork ram.

FV) —Flow control valve.

GE) —General Electric Co.

HC) —Hydraulic and chain.

HE) —Hydraulic electric.

Her) —Hercules Motor Co.

Hyd) —Hydraulic.

Inf) —Infinite.

Int) —International Harvester Co.

JIG) —J. I. Case & Co.

Kim) —Star Kimble Co.

N) —No or none.

OGE) —Owen, General Electric or Electric Specialty Co.

OGE) —Owen, General Electric or Electric Specialty Co.

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OGE) —Owen, General Electric or Electric Specialty Co.

Opt) —Optional.

Plf) —Platform.

Reg) —Regulated.

SA) —Designed for specific application.

Sp) —Built to specification.

St) —Torque converter.

TC) —Torque converter.

Var) —Various.

W) —Waukegan Motor Co.

Wau) —Waukegan Motor Co.

Wit) —Willys Motor Co.

Wis) —Wisconsin Motor Co.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

Y) —Yes.

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED LOW-LIFT FORK

Due to space limitations basic models only are shown for each company represented.

Line Number	MAKE AND MODEL		Maximum Load Capacity (lbs.)	Service Weight (lbs.) Excluding Battery	Operator—Walks or Rides	Motive Power	Lifting Power	OVERALL CHASSIS DIMENSIONS (Ins.)				PLATFORM DIMENSIONS (Ins.)				FORK DIMENSIONS (Ins.)								
								Length—Excluding Platform or Forks	Width	Height—To Top of Controls	Lowest Underclearance	Length		Width		Height Above Ground		Length		Width of Face	Lateral Overall Width		Height Above Ground	
												Minimum	Maximum	Minimum	Maximum	Lowered	Elevated	Minimum	Maximum		Minimum	Maximum	Lowered	Elevated
1	Allis-Chalmers (Buda)	CB-20	2000	1300	R	GE		97	40	50	3				16½									
2	Automatic	LO-2	4000	3125	R	EM	Hyd	113	38			55½		26½	10½	16½								
3		LO-3	6000	3425	R	EM	Hyd	113	41			55½		27½	10½	16½								
4		LO-5	10000	4500	R	EM	Mec	126½	41			60½		26½	11	16								
5		PE-427	4000		W	EM	Hyd	30½	30	50	1½						29½	59½	9½	27½	3½	8½		
6		PE-627	6000		W	EM	Hyd	30½	30	50	1½						29½	59½	9½	27½	3½	8½		
7		TNE-4	4000		W	EM	Hyd	31½	30	50	2½	36	72	20½	(2)	(3)								
8		TWE-4	4000		W	EM	Hyd	31½	30	50	2½	36	72	26½	(2)	(3)								
9		TNE-6	6000		W	EM	Hyd	31½	30	50	2½	36	72	20½	(2)	(3)								
10		TWE-6	6000		W	EM	Hyd	31½	30	50	2½	36	72	26½	(2)	(3)								
11		TWH-4	4000		W	EM	Hyd	33½	30	50	2½	30	60	27	6½	21								
12		TWH-6	6000		W	EM	Hyd	33½	30	50	2½	30	60	27	6½	21								
13		ETWE-4	4000		R	EM	Hyd	29½	32		2½	36	72	26½	(2)	(3)								
14		EPE-4	4000		R	EM	Hyd	29½	32		1½													
15		Baker-Rutland	E-3	6000	3500	R	E-G	Hyd	70½	42½	56½	4	55	84	26½	48	10½	16½						
16	E-5		10000	4800	R	E-G	Hyd	71½	42½	56½	4	60	96	26½	48	10½	16½							
17	Barrett-Gravens	PO-40	4000	1625	W	EM	HE	38½	36	59½	1½	36	60	24½	6½									
18		PO	4000	1132	W	EM	HE	32½	27½	59½	3½	36	72	20	(2)	(6)								
19		PX	4000	1145	W	EM	HE	32½	27½	59½	3½	36	72	20	(2)	(6)								
20		STF-40	4000	1835	W	EM	HE	38½	52½	59½	1½						30	60	48	9	27	3½	7½	
21																	24	48	4	6	32	2	68	
22	Clark	40LP	4000	940	W	E-G	Hyd	26½	32	52	2½	36	72	18	26	(34)	(35)							
23		60LP	6000	970	W	E-G	Hyd	26½	32	52	2½	36	72	18	26	(34)	(35)							
24		40P	4000	1040	W	E-G	Hyd	26½	32	52	2½						30	72	9½		27	3½	7½	
25		60P	6000	1070	W	E-G	Hyd	26½	32	52	2½						30	72	9½		27	3½	7½	
26	Colson	S-4	4000	1078	R	GE	Hyd	30	29			30	72		24	(34)	(35)							
27		DFP-4	4000	1175	R	GE	Hyd	30	29								32	60	9½		27	3½	7½	
28	Greacant	PLA-4	4000		R	E-G	Hyd	110	38		4	48	24		7	20								
29		PLB-4	4000		R	E-G	Hyd	115	38		4	48	24		7	20								
30		RLB-10	10000		R	E-G	Hyd	130	42		4½	60	27		11	24								
31	Elwell-Parker	EQ-4	4000	2100	R	EM	Mec	85½	31½	54½	3	41	66	24	26½	10½	15							
32		EQ-4	4000	2100	R	EM	Mec	87½	31½	54½	2½	41	60	18½	26½	7	10½							
33		EP-4-11	4000	3150	R	EM	Mec	119½	43½	66½	4	54	120	26½	36	10½	16½							
34		EP-8	6000	3200	R	EM	Mec	119½	42½	66	4	54	120	26½	36	10½	16½							
35		GEF-6	6000	3900	R	GE	Hyd	125½	42½	66	4	54	120	26½	36	10½	16½							
36		EW-6	6000	3450	R	EM	Mec	120½	42½	66	10½	54	108	26½	36	16½	22½							
37		EP-10	10000	3800	R	EM	Mec	129½	43½	69½	3½	60	120	26½	40	11	16½							
38		GEF-10	10000	4200	R	GE	Hyd	132½	42½	66	3½	60	120	26½	40	11	16½							
39		EY-ZO	20000		R	EM	Hyd	146½	45½	66	6	75				17½	23½							
40		L-13	20000		R	EM	Hyd	155½	48½	66	2½	72				11½	17½							
41		L-12	20000		R	EM	Hyd	166½	60	66	2	96				11½	17							
42		L-3	30000		R	EM	Hyd	138½	60	66	8	60				18	24							
43		L-14	40000		R	EM	Hyd	187	66½	66	8	96				17½	23½							
44		Erickson	P5	5000	2700	R	GE	Hyd	75	40	56	7	60	Var	Var	Var	11	21						
45	P7		7000	3000	R	GE	Hyd	75	40	56	7	60	Var	Var	Var	11	21							
46	P7A		7000	3000	R	GE	Hyd	84	40	56	7	60	Var	Var	Var	12	21							
47	P10A		10000	3500	R	GE	Hyd	84	40	56	7	60	Var	Var	Var	12	21							
48	Kalamazoo	301	800	1000	R	GE	Hyd	63½	33½	45	4					18	25	3½	6	32	5½	18		
49	Lewis-Shepard	MN4P	4000	1400	R	EM	Hyd	32½	32	54	1	36	72	18		36	60	9½	25	36	3½	7½		
50		MN4N	4000	1200	R	EM	Hyd	25½	32	54	2				(2)	(20)								
51		MN4W	4000	1200	R	EM	Hyd	25½	32	54	3	30	72		36	(2)	(20)							
52		SE4P	4000	1000	W	EM	Hyd	25½	32	53	1						32	72	9½	25	36	3½	7½	
53		SE8P	8000	1150	W	EM	Hyd	25½	32	53	1						32	72	9½	25	36	3½	7½	
54		E4TP	4000	1000	W	EM	Hyd	33	32	54	1						24	42	6½	16				
55		E4N	4000	(15)	W	EM	Hyd	25½	32	54	2	36	72	18		(2)	(20)							
56		E4W	4000	(15)	W	EM	Hyd	25½	32	54	3	30	72		36	(2)	(20)							
57		E8N	8000	(15)	W	EM	Hyd	25½	32	54	2	36	72	18		(2)	(20)							
58		E8W	8000	(15)	W	EM	Hyd	25½	32	54	3	30	72		36	(2)	(20)							
59		Lift Trucks	KNS	6000	1300	W	EM	Hyd	31½	32½	60½		36	72	18	29	(2)	(3)						
60			KMS	6000	1400	W	EM	Hyd	31½	32½	60½		36	72	21	25	(2)	(3)						
61			KWS	6000	1600	W	EM	Hyd	31½	32½	60½		36	72	26½		(2)	(3)						
62			KPNS	4000	1200	W	EM	Hyd	33½	32½	60½	½						30	60	8½	22	28	3½	7½
63	KPWS	4000	1300	W	EM	Hyd	33½	32½	60½	½						30	60	10½			3½	7½		
64	Market Forge	Skid Lift Truck	8000	(16)	W	E-G	Hyd	43	(18)	45	(19)	30	72	18	26	(2)	(20)							
65		Pallet Lift Truck	6000	(17)	W	E-G	Hyd	43	28	45	1½						30	72	11½	27	27	(21)	7½	
66	Mercury	A-1007	3000	2100	R	EM	Hyd	56	33½		2½		20		7	18								
67		A-1007	4000	2300	R	EM	Hyd	56	33½		2½		20		7	18								
68		A-1017	4000	3200	R	EM	Hyd	60	41½		4½		24		11	23								
69		A-1020	8000	3400	R	EM	Hyd	60	41½		4½		24		11	23								
70		A-1011	10000	4500	R	EM	Hyd	69½	42		3½		26½		11½	22								
71	Raymond	EL4P	4000	1360	R	EM	Hyd	31½	34	55	2	30	48	18	24	6	10							
72		EL4F	4000	1410	R	EM	Hyd	30	34	55	1½						30	48	9½	24	30	3½	7½	

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

OR PLATFORM TRUCKS

A multitude of variations are available from any of the companies listed.

ENGINE OR MOTOR		BATTERY		SPEEDS With Capacity Load		GRAD- ABILITY (Per Cent)		WHEELS					Line Number		
Make and Model	Horsepower	Normal Voltage	Amperes Hours	Truck mph	Time of Lift sec	Unloaded	Capacity Load	Dead Man Brake	Drive		Fork				
									Number	Diameter (In.)	Set Tandem	Number in Each Fork or Trail	Diameter (In.)		
Wis	TF	13½		10.0		12	Y	2	16½		1	16½	1		
Own		30		5.4	3.4		Y	2	22x4½	N	2	9x5	2		
Own		36		4.0	4.2		Y	2	22x6	N	2	10x6	3		
Own		36		5.5	3.8		Y	2	20x6	N	2	10x6	4		
Auto-Lite		1½	12				Y	1	10x5	D	2	3½	5		
Auto-Lite		1½	12				Y	1	10x6	D	2	3½	6		
Auto-Lite		1½	12				Y	1	10x5	N	2	(4)	7		
Auto-Lite		1½	12				Y	1	10x5	N	2	(4)	8		
Auto-Lite		1½	12				Y	1	10x6	N	2	(4)	9		
Auto-Lite		1½	12				Y	1	10x6	N	2	(4)	10		
Auto-Lite		1½	12				Y	1	10x5	N	2	5½x4½	11		
Auto-Lite		1½	12				Y	1	10x6	N	2	5½x4½	12		
Auto-Lite		1½	12				Y	2	10x4	N	2	(4)	13		
Auto-Lite		1½	12				Y	2	10x4	D	2	3½	14		
Own	2460	8	36	450	4.8	4.0	10	8	Y	2	22x6	N	2	10x6	15
Own	2460	8	36	500	4.0	6.0	10	8	Y	2	22x6	Y	4	10x6	16
Own		1	12	(5)	2.0	60.0	10	6	Y	1	10	N	1	6	17
Own		1	12	(5)	2.5	6.0	28	10	Y	1	10	N	2	(2)	18
Own		1	12	(5)	2.5	6.0	28	10	Y	1	10	N	2	(2)	19
Own		1	12	(5)	2.5	1.0	25	9	Y	1	10	N	1	3	20
Own		1	12	(5)	2.0	60.0	10	6	Y	1	10	N	1	6	21
AL or AC		12		2.3			Y	1	10½x6x5		2	6x5	22		
AL or AC		12		2.3			Y	1	10½x6x5		2	6x5	23		
AL or AC		12		2.3			Y	1	10½x6x5	Y	2	6x3½	24		
AL or AC		12		2.3			Y	1	10½x6x5	Y	2	6x3½	25		
		6		4.0	2.0		Y	1	10½x5		2	7x5	26		
		6		4.0			Y	1	10½x5	Y	2	3½	27		
Kim	3458	32	450	5.5	20	15	10	Y	2	16	Y	2	6½	28	
Kim	3458	32	500	5.5	20	15	10	Y	2	16	Y	2	6½	29	
Kim	3458	32	500	4.0	15	15	10	Y			Y	2	6½	30	
Own		(7)		4.0	2½		Y	2	15x5	N	2	9x5	31		
Own		(7)		4.0	2½		Y	2	15x5	Y	4	6½x4½	32		
Own		(8)		4.8	4		Y	2	22x4½	N	2	10x6	33		
Own		(8)		4.8	4		Y	2	22x6	N	2	10x6	34		
Mer	F-162	34					Y	2	22x6	N	2	10x6	35		
Own		(8)		4.0	4		Y	2	22x6	N	2	15x5	36		
Own		36		4.5	5		Y	2	22x6	Y	4	10x6	37		
Own				6.5	6		Y	2	22x6	Y	4	10x6	38		
Own		(9)		3.0	7		Y	2	22x6	Y	4	15x8½	39		
Own		60		3.0	7		Y	2	22x7	T	6	10x6	40		
Own		60		2.5	8		Y	2	22x7	Q	6	10x6	41		
Own		60		2.5	7		Y	2	22½x10	Y	4	15x4	42		
Own		60		3.0	7		Y	2	22x10	T	6	15x10	43		
Int	U123	27	6	20	25.0	24	30	N	2	6.00/16	N	2	10½x7x6½	44	
Int	U123	27	6	20	25.0	24	30	N	2	6.00/16	N	2	10½x7x6½	45	
Int	U123	27	6	20	25.0	24	30	N	2	6.00/16	Y	4	10½x7x6½	46	
Int	U123	27	6	20	25.0	24	30	N	2	6.00/16	Y	4	10½x7x6½	47	
Wis	AEN	7½		6.0		20	N	2	16		N	16	48		
General Electric		12	(1)	3.9	6	20	6½	Y	1	10	N	1	3½	49	
General Electric		12	(1)	3.9	6	20	6½	Y	1	10	N	2	(2)	50	
General Electric		12	(1)	3.9	6	20	6½	Y	1	10	N	2	(2)	51	
Auto-Lite		12	(14)	2.3	6	44	10½	Y	1	10½	N	1	3½	52	
Auto-Lite		12	(14)	2.1	9	44	7½	Y	1	10½	N	1	3½	53	
Auto-Lite		12	(14)	2.3	6	44	10½	Y	1	10½	N	1	3½	54	
Auto-Lite		12	(14)	2.3	6	44	10½	Y	1	10½	N	2	(2)	55	
Auto-Lite		12	(14)	2.3	6	44	10½	Y	1	10½	N	2	(2)	56	
Auto-Lite		12	(14)	2.1	9	44	7½	Y	1	10½	N	2	(2)	57	
Auto-Lite		12	(14)	2.1	9	44	7½	Y	1	10½	N	2	(2)	58	
Bal	183-D	1	12	300	2.0			N	2	10	N			59	
Bal	183-D	1	12	300	2.0			N	2	10	N			60	
Bal	183-D	1	12	300	2.0			N	2	10	N			61	
Bal	182-D	1½	12	300	2.0			N	2	10	N	(13)	3½	62	
Bal	182-D	1½	12	300	2.0			N	2	10	N	(13)	3½	63	
Bal	183-D	1½	12	(22)	4.0	10	20	10	Y	1	10½x7			64	
Bal	183-D	1½	12	(22)	4.0	10	20	10	Y	1	10½x7	Y	6	3½x2	65
Own		(23)	(24)	4.3	2		Y	2	16	N	2	6½	66		
Own		(23)	350	4.3	2		Y	2	16	Y	4	6½	67		
Own		(23)	450	4.5	3		Y	2	20	N	2	10½	68		
Own		(23)	(25)	4.5	3		Y	2	20	N	2	10½	69		
Own		(23)	(25)	4.0	3		Y	2	20	Y	4	10½	70		
Gen	BT-1322-A72	1½	12	600	3.5	3	12	8	Y	1	10			71	
Gen	BT-1322-A72	1½	12	600	3.3	3	7	10	Y	1	10	D	2	3½	72

SYMBOLS & ABBREVIATIONS

- * Maximum.
- † Including platform.
- Standard.
- ▲ Minimum.
- 1—400 to 800.
- 2—6, 7, 9 or 11.
- 3—9½, 10½, 12½ or 14½.
- 4—5½, 6½, 8 or 10 x 5.
- 5—250 to 450.
- 6—12, 13, 15 or 17.
- 7—24 to 30.
- 8—32 to 36.
- 9—48 to 60.
- 13—1 or 2.
- 14—300 to 360.
- 15—1000 to 1200.
- 16—900 to 1650 depending on length.
- 17—1100 to 1700 depending on length.
- 18—15 to 26.
- 19—3, 4, 5 or 6.
- 21—10, 11, 13 or 15.
- 21—3½ adjustable to 6½.
- 22—340 to 500.
- 23—28 to 30.
- 24—300 to 350.
- 25—450 to 550.
- 26—27 with lead acid battery; 29 with alkaline battery.
- 29—250 to 440.
- 30—Two standard; one for forks under 36".
- 31—2½ to 3½.
- 32—6½, 7, 9 or 11.
- 33—2½ to 3½.
- 34—6, 7, 9, 10 or 10½.
- 35—10, 11, 13, 14 or 16½.
- AC—Allis Chalmers.
- AL—Electric Auto-Lite Co.
- App—Appropriate.
- Bal—Baldor Co.
- D—Dual.
- E-G—Electric or gas-electric.
- EM—Electric motor.
- GE—Gasoline engine.
- Gen—General Electric Co.
- HE—Hydraulic electric.
- Her—Hercules Motor Co.
- Hyd—Hydraulic.
- Int—International Harvester Co.
- Kim—Star Kimble Co.
- Lin—Linkage.
- Mec—Mechanical.
- N—No or none.
- Q—Quad.
- R—Rales.
- T—Triple.
- Var—Variable.
- W—Waka.
- Wis—Wisconsin Motor Co.
- Y—Yes.

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

POWERED LOW-LIFT FORK

Line Number	MAKE AND MODEL		Maximum Load Capacity (lbs.)	Service Weight (lbs.) Excluding Battery	Operator — Walks or Rides	Motor — Fuel or Electric	Lifting Power	OVERALL CHASSIS DIMENSIONS (Ins.)				PLATFORM DIMENSIONS (Ins.)						FORK DIMENSIONS (Ins.)						
								Length—Excluding Platform or Forks	Width	Height—To Top of Controls	Lowest Underclearance	Length		Width		Height Above Ground		Length		Width of Face	Lateral Outside Overall Width		Height Above Ground	
												Minimum	Maximum	Minimum	Maximum	Lowered	Elevated	Minimum	Maximum		Minimum	Maximum	Lowered	Elevated
1	Revolutor	52, 11	4000	1130	W	EM	Hyd	29 1/2	32	50	3 1/2	36	72*	18*	26 1/2*	(2)	(20)							
2		52, 11	8000	1200	W	EM	Hyd	29 1/2	32	50	3 1/2	36	72*	18*	26 1/2*	(2)	(20)							
3		52, 21	4000	1080	W	EM	Hyd	34	32	50							32	60*	9	25*	30	3 1/4	7 1/4	
4		52, 21	8000	1090	W	EM	Hyd	34	32	50							32	60*	9	25*	30	3 1/4	7 1/4	
5	Teemeter	W	4000	920	W	EM	Hyd	30	(28)	46	1						30	72	9*	27*	3 1/4	7 1/4		
6	Truck-Man	DF, DFP	3000	960	R	GE	Hyd	49 1/2	27	63	3	32	72	18	48	(10)	(11)	40	48	9	27*	3 1/4	7 1/4	
7		DH, DHP	4800	905	R	GE	Hyd	47 1/2	27	63	3	32	72	18	48	(10)	(11)							
8	Yale & Towne	KM4L	4000	2160	R	E-G	Lin	54 1/4	32 1/4	52	2 1/4	Var	Var	Var	Var	8 1/4	10 1/4							
9		K23E1	4000	3300	R	E-G	Lin	64	44 1/2	56	4 1/2	Var	Var	Var	Var	11	17							
10		K23E8	8000	3650	R	E-G	Lin	64	44 1/2	56	4 1/2	Var	Var	Var	Var	11	17							
11		K26S10	10000	4525	R	E-G	Lin	68	47	58	4 1/2	Var	Var	Var	Var	11 1/4	17							
12		K26S16	18000	5800	R	E-G	Lin	62 1/2	45	60	4 1/2	Var	Var	Var	Var	11 1/4	17							
13		K26G20L	20000	10475	R	E-G	Lin	81 1/4	60	68	3 1/4	Var	Var	Var	Var	11 1/4	17							
14		K35-6	8000	3660	R	E-G	Lin	64 1/2	44 1/2	56	8	Var	Var	Var	Var	17	23							
15		K26G20H	20000		R	E-G	Lin	80	66	66	5 1/2	Var	Var	Var	Var	17	23							
16		M4	4000	1140	W	E-G	Hyd	34 1/4	31	50	(31)	30	96	18	36	(2)	(20)							
17		M6	6000	1200	W	E-G	Hyd	34 1/4	31	50	(31)	30	96	18 1/4	36 1/4	(32)	(20)							
18		M4UW	4000	1735	W	E-G	Hyd	40 1/2	31	50	3 1/4	36	60	26	26	6	19							
19		M6UW	6000	1815	W	E-G	Hyd	40 1/2	31	50	3 1/4	36	60	26 1/4	26 1/4	6	19							
20		M4P	4000	1085	W	E-G	Hyd	37 1/2	31	50	2 1/4						30	84	9 1/4*	25	48	3 1/4	7 1/4	
21		M6P	6000	1120	W	E-G	Hyd	37 1/2	31	50							30	84	9 1/4*	25	48	3 1/4	7 1/4	
22		M54	4000	1020	W	EM	Hyd	28	31	50	(33)	30	96	18	36	(2)	(20)							
23		M56	6000	1060	W	EM	Hyd	28	31	50	(33)	30	96	18 1/4	36 1/4	(32)	(20)							
24		M54P	4000	1120	W	EM	Hyd	31 1/2	31	50							30	84	9 1/4*	25	48	3 1/4	7 1/4	
25		M56P	6000	1160	W	EM	Hyd	31 1/2	31	50							30	84	9 1/4*	25	48	3 1/4	7 1/4	
26		M4TP	4000	1000	W	E-G	Hyd	38	31	50	2 1/4						24	36	5 1/4*	16	27	3 1/4	6 1/4	
27		M7 1/2	7500		W	E-G	Hyd	34 1/4	31	50	3 1/4	30	96	18 1/4	36 1/4	(38)	(39)							
28		RL-4	4000		R	EM	Hyd	25 1/4	35	53 1/4	2 1/4	36	60	19	26	6	15							
29		RP-4	4000		R	EM	Hyd	25 1/4	35	53 1/4	2 1/4						36	60	9 1/4*	25	36	3 1/4	7 1/4	

Manufacturers' Directory

Listed below are the names and addresses of the manufacturers who cooperated in supplying the specifications appearing in this section. Additional information on price, special models, application, engineering details, etc., can be had by writing direct to the manufacturer. Please mention DA when writing for details

Allis-Chalmers Mfg. Co., Buda Co., Div.
154th & Commercial Aves., Harvey, Ill.

Allis-Chalmers Mfg. Co., Construction Machinery Div.
Box 512, Milwaukee 1, Wis.

American Tractor Corp.
Churubusco, Ind.

Automatic Transportation Co.
115 W. 87th St., Chicago 20, Ill.

Baker-Raulang Co.
1216 W. 80th St., Cleveland 2, Ohio

Barrett-Cravens Co.
644 Dundee Rd., Northbrook, Ill.

Caterpillar Tractor Co.
Peoria, Ill.

Champ Corp.
2500 N. Rosemead Blvd., El Monte, Calif.

Clark Equipment Co., Construction Machinery Div.
Box 599, Pipestone, Benton Harbor, Mich.

Clark Equipment Co., Industrial Truck Div.
Battle Creek 11, Mich.

The Colson Corp.
Elyria, Ohio

Crescent Truck Co., Div. Barrett-Cravens Co.
644 Dundee Rd., Northbrook, Ill.

The Elwell Parker Electric Co.
4175 St. Clair Ave., Cleveland 3, Ohio

Erickson Power Lift Trucks, Inc.
211 St. Anthony Blvd., N.E., Minneapolis, Minn.

Gerlinger Carrier Co.
Lyle & Birch Sts., Dallas, Ore.

The Frank G. Hough Co. (Payloador)
830 Sunnyside Ave., Libertyville, Ill.

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

INDUSTRIAL TRUCKS—

Due to space limitations basic models only are shown for each company represented.

Line Number	MAKE AND MODEL	Drawbar Pull (lbs)	Trailing Load— (Dry Level Concrete (Tons))	Weight—Excluding Battery	OPERATOR		MOTOR OR ENGINE	BATTERY		DIMENSIONS					3 or 4 Point Suspension				
					Rides or Walks	Sits or Stands		Horsepower	Normal Voltage	Amps. Hours	Wheelbase	Length—Overall	Width—Overall	Height, to Steering Wheel		Under-clearance			
																At Truck Center	Lowest Point		
1	Alfie-Chalmers (Buda)	HB-75	7500	12200	R	S	GE	Ow	68-230	74	72	125½	70½	66	14		4		
2		HB-80	9000	13200	R	S	GE	Ow	68-230	74	72	125½	70½	66	14		4		
3		HA-75	7500	12400	R	S	GE	Ow	68-230	74	72	125½	70½	66	14		4		
4		HAD-75	7500	12500	R	S	DE	Ow	68D-230	60	72	125½	73½	66	14		4		
5		HA-90	9000	13400	R	S	GE	Ow	68-230	74	72	125½	70½	66	14		4		
6		HB-120	12000	15700	R	S	GE	Ow	68-230	74	72	125½	70½	66	14		4		
7		HA-120	12000	15900	R	S	GE	Ow	68-230	74	72	125½	70½	66	14		4		
8		TS-24	2400	3250	R	S	GE	Ow	48-153	49	45	81½	42	62	8½		4		
9		TD-24	2400	3350	R	S	DE	Ow	48D-153	40	45	81½	42	62	8½		4		
10		TS-30	3000	4200	R	S	GE	Ow	48-153	48	45	81½	42	62	8½		4		
11		TD-30	3000	4300	R	S	DE	Ow	48D-153	40	45	81½	42	62	8½		4		
12		JQ230	4500	5735	R	S	GE	Ow	68-230	74	62	102	66	62	9½		4		
13		JD230	4500	5880	R	S	DE	Ow	68D-230	60	62	102	66	62	9½		4		
14		JQ230N	3000	4315	R	S	GE	Ow	68-230	74	62	102	58	62	9½		4		
15		JD230N	3000	4350	R	S	DE	Ow	68D-230	60	62	102	58	62	9½		4		
16		JQ230P	3000	4155	R	S	GE	Ow	68-230	74	62	107	58	62	9½		4		
17		JD230P	3300	4300	R	S	DE	Ow	68D-230	60	62	107	58	62	9½		4		
18		JQ230WN	4500	6580	R	S	GE	Ow	68-230	74	62	102	66	62	9½		4		
19		JD230WN	4500	6725	R	S	DE	Ow	68D-230	60	62	102	66	62	9½		4		
20		JQ230WL	5000	6455	R	S	GE	Ow	68-230	74	62	102	66	62	9½		4		
21		JD230WL	5000	6600	R	S	DE	Ow	68D-230	60	62	102	66	62	9½		4		
22		JQ230PLS	3800	4815	R	S	GE	Ow	68-230	74	62	102	64	62	9½		4		
23		JD230PLS	3800	4860	R	S	DE	Ow	68D-230	60	62	102	64	62	9½		4		
24		JQ230PLD	4400	5635	R	S	GE	Ow	68-230	74	62	102	64	62	9½		4		
25		JD230PLD	4400	5780	R	S	DE	Ow	68D-230	60	62	102	64	62	9½		4		
26	Automatic	FT	250	785*	R	S	EM	Auto-Lite		1½	24	30	46½	29	51½	3½	3		
27		FT-E	250	785*	R	St	EM	Auto-Lite		1½	24	25	52	29	51½	3½	3		
28		BTN	600	17	4650*	R	S	EM	Ow		36	41	68	36	6		4		
29		MIN	725	20½	5300*	R	S	EM	Ow		40	75½	40	57	3½		4		
30		BTW	600	17	5840*	R	S	EM	Ow		36	41	68	36	6		4		
31		LTWE	600	17	3550	R	S	EM	Ow		42	78½	42	6			4		
32		TR	190	2½	1080	W	EM	Auto-Lite		1½	12	23½	38½	30	50	2½	3		
33		TRH	200	5½	1640	W	EM	Auto-Lite		1½	12	31	47½	32	54	2½	3		
34		TRLE	100	2½	840	W	EM	Auto-Lite		1½	12	37½	49½	30	50	2½	3		
35	Baker-Raulang	TSSA	475	2800	R	S	EM	Ow			43	89½	41½	62	9		3		
36	Barrett-Cravens	RX-24	200	5	1400	RW	St	EM	Ow		1	24	32½	47½	27½	35	3	3	
37		DX-12	200	5	840	R	S	EM	Ow		1	12	2	41½	26½	43½	3½	3	
38		SK-24	200	5	1400	R	St	EM	Ow		1	24	32½	47½	27½	35	3	3	
39		TX-12	200	5	910	W	St	EM	Ow		1	12	2	41½	26½	43½	3½	3	
40	Clark	CKE-5	500	10	1850	RW	St	GE	Con	N-62	15	34	62½	29	54	0½	2½	3	
41		CK-20	2000	40	3200	R	S	GE	Con	Y-112	30	40	68	39	54½	8½	3½	4	
42		CK-26	2600	52	3400	R	S	GE	Con	Y-112	30	40	68	39	54½	8½	3½	4	
43		CT-21	2100	42	3000	R	S	GE	Chr	IND-30	70	57	94	52	57	11	5	4	
44		CT-30	3000	60	3900	R	S	GE	Chr	IND-30	70	64½	105½	52	57	12	51	4	
45		CT-40	4000	80	5420	R	S	GE	Chr	IND-30	70	64½	105½	52	57	12	51	4	
46		CT-46	4600	92	6200	R	S	GE	Chr	IND-30	70	64½	105½	52	57	12	51	4	
47		CT-75	7500	150	9750	R	S	GE	Chr	6A	62	62	107	69	56½	7	7	4	
48		CT-120	12000	240	15500	R	S	GE	Chr	19-A	114	69	122½	92	54	8½	7	4	
49		ECK-24	2400	48	3175	R	S	EM	Atlie-Chalmers		44	79	41½	57½	4½	2½	4		
50		ECK-30	3000	60	3655	R	S	EM	Atlie-Chalmers		44	79	41½	57½	4½	2½	4		
51		Tugger	200	1630	RW	St	EM	Auto-Lite		12	34	50½	32	43	4½	3			
52	Colson	T-800	800	1700	R	St	GE	Ow		8	32	56½	32	51½	4		3		
53	Crescent	JW-1.5	1500	1630	R	S	EM	Star Kimble		32	Var	32	56	33	51	6	6	4	
54		JW-2	2000	2000	7½	R	S	EM	Star Kimble		38	Var	40	58	40	61½	6	6	4
55		MW-3	3000	10	3200	R	S	EM	Star Kimble		38	Var	45	79	42	61½	6	6	4
56		MW-4	4000	14	3400	R	S	EM	Star Kimble		36	Var	45	79	42	61½	6	6	4
57	Hyater	Tug	540	27½	1180	R	St	GE	Wis	AKN	6	36	74	42	50	6	6	3	
58	Kalamazoo	3800	1200	20	1850	R	S	GE	Wis	TF	14½	51½	84	42	48	7½	3	3	
59	Lewis-Shepard	JBT	600	6	1500	R	S	EM	General Electric		12	31	29½	40½	32	51½	3	3	
60		E6T	750	7½	1800	RW	St	EM	Auto-Lite		12	31	30	42	30	4	3	3	
61	Lift Trucks	KT	(4)	1200	W	EM	Bal	182-D	½	12	308	24½	42	26½	50½	2½	2½	4	
62		KTS	(4)	1150	W	EM	Bal	182-D	½	12	300	19½	36½	32½	50½	2½	2½	4	
63		KTRS	(4)	1400	R	EM	Bal	182-D	½	12	300	27½	45	32½	44	2½	2½	4	
64		KTR-12	(4)	1000	RW	EM	Bal	182-D	½	12	Var	27½	45	32½	44	2½	2½	4	
65		KTR-18	(5)	1120	RW	EM	Bal	183-D	1	18	Var	32½	50½	Var	44	2½	2½	4	
66		KTR-24	(5)½	1240	RW	EM	Bal	185-D	1½	24	Var	35	55	Var	44	2½	2½	4	
67	Market Forge	ST-1000	1000	10	825	R	S	E-Q	Bal	183-D	1½	12	5	25½	48	30	45	5½	3
68		UT-1000	1000	10	825	R	St	E-Q	Bal	183-D	1½	12	5	25½	48	30	45	5½	3
69	Mercury	A-440	2300	60	3000	R	S	GE	Wau	FC-90	30	41½	70½	40	56	10	4	3	
70		A-510	2600	65	3600	R	S	GE	Wau	FC-90	30	41½	70½	40	56	10	4	3	
71		A-460	2400	60	3200	R	S	GE	Waukesha		30	40	78	41	56	7½	4	4	
72		A-480	3000	75	4000	R	S	GE	Waukesha		30	40	78	41	56	7½	4	4	
73		A-550	2500	80	2900	R	S	EM	Ow		7	45	76	41	64	8½	4	4	
74		A-560	1000	25	1450	R	S	EM	Ow		36	300	41	70	34	51½	8	3½	3
75		A-580	5800	135	5400	R	S	EM	Ow		46	12	60	84	64	86½	8	4	4
76		A-750	3000	75	3300	R	S	EM	Ow		36	12	48	88	42	52	5	5	3
77		A-830	3000	75	4000	R	S	GE	Chr	3128	60	63½	107½	51	63	9½	7½	4	
78		A-840	4000	100	5000	R	S	GE	Chr	3128	60	63½	107½	51	63	9½	7½	4	
79		A-850	5000	125	6300	R	S	GE	Chr	3128	60	63½	107½	51	63	9½	7½	4	
80	Payloader (Hough)	TC-60	6000	150															

DA INDUSTRIAL TRUCK SPECIFICATIONS — 1956-57

TOWING TRACTOR TYPE

A multitude of variations are available from any of the companies listed.

TURNING RADIUS (Ins.)			SPEEDS				GRAD-ABILITY Per Cent		TIRES				Line Number			
Outside	Inside	Intersecting Angle	No. of Forward	No. of Reverse	Unloaded		Unloaded	At Rated Load	Coupler	Type		Size				
					Forward (mph)	Reverse (mph)				Steering Wheels	Driving Wheels	Steering Wheels	Driving Wheels			
164	76	103	4	1	15.0	2.0			Opt	Pn	Pn	7.00/16	8.25/20	1		
164	76	103	4	1	15.0	2.0			Opt	Pn	Pn	7.00/16	8.25/20	2		
164	76	103	4	1	15.0	2.0			Opt	Pn	Pn	7.00/16	8.25/20	3		
164	76	103	4	1	15.0	2.0			Opt	Pn	Pn	7.00/16	8.25/20	4		
164	65	114	4	1	11.0	1.5			Opt	Pn	Pn	7.00/16	8.25/20	5		
164	65	114	4	1	11.0	1.5			Opt	Pn	Pn	7.00/16	8.25/20	6		
101 ^{1/4}	43 ^{1/4}	64 ^{1/2}	3	1	14.0	3.5			Opt	Pn	Pn	6.00/9	6.00/16	7		
101 ^{1/4}	43 ^{1/4}	64 ^{1/2}	3	1	14.0	3.5			Opt	Pn	Pn	6.00/9	6.00/16	8		
101 ^{1/4}	43 ^{1/4}	64 ^{1/2}	3	1	14.0	3.5			Opt	Pn	Pn	6.00/9	6.00/16	9		
101 ^{1/4}	43 ^{1/4}	64 ^{1/2}	3	1	14.0	3.5			Opt	Pn	Pn	6.00/9	6.00/16	10		
118	35	87	4	1	25.0	2.5			Un	Pn	Pn	6.00/9	6.50/16	11		
118	35	87	4	1	25.0	2.5			Un	Pn	Pn	6.00/9	6.50/16	12		
118	39	82 ^{1/2}	4	1	26.7	2.5			Un	Pn	Pn	6.00/9	7.50/16	13		
118	39	82 ^{1/2}	4	1	26.7	2.5			Un	Pn	Pn	6.00/9	7.50/16	14		
118	39	82 ^{1/2}	4	1	26.7	2.5			Un	Pn	Pn	6.00/9	7.50/15	15		
118	35	87	4	1	25.0	2.5			Un	Pn	Pn	6.00/9	6.50/16	16		
118	35	87	4	1	25.0	2.5			Un	Pn	Pn	6.00/9	6.50/16	17		
148	63 ^{1/2}	96	4	1	26.7	2.5			Un	Pn	Pn	6.00/9	7.50/16	18		
148	63 ^{1/2}	96	4	1	26.7	2.5			Un	Pn	Pn	6.00/9	7.50/16	19		
166	74	103 ^{1/4}	4	1	25.0	2.5			Un	Pn	Pn	6.00/9	6.50/16	20		
166	74	103 ^{1/4}	4	1	25.0	2.5			Un	Pn	Pn	6.00/9	6.50/16	21		
166	74	104 ^{1/2}	4	1	25.0	2.5			Un	Pn	Pn	6.00/9	6.50/16	22		
166	74	104 ^{1/2}	4	1	25.0	2.5			Un	Pn	Pn	6.00/9	6.50/16	23		
37	0	36	3	3	4.8	4.8	2.4	2.4	P	Cu	Cu	10 ^{1/2} x5	17x4 ^{1/2}	24		
60	0	50	4	4	7.2	7.2	4.6	4.6	P	So	So	15x3 ^{1/2}	20x5	25		
81	30	59	4	4	7.5	7.5	4.8	4.8	P	So	So	20x5	20x5	26		
107	46	47	4	4	8.3	8.3	5.7	5.7	P	So	So	20x5	16x4	27		
69	2 ^{1/2}	59	4	4	5.5	5.5	3.5	3.5	P	So	So	14x4 ^{1/2}	22x6	28		
			2	2					AJ	Cu	Cu	10 ^{1/2} x5	10x5	29		
			2	2					AJ	Cu	Cu	10 ^{1/2} x5	10x5	30		
			2	2					N	So	So	10x5	5 ^{1/2} x4 ^{1/2}	31		
68	58	8	5	5	7.5	7.5	3.5	3.5	AJ	Cu	Cu	13x3 ^{1/2}	21x5	32		
38 ^{1/4}	41	4	3	6.2	4.0	3.2			Un	So	So	10x5	7x2 ^{1/2}	33		
30	48	2	2	3.2	3.2	1.6		24	8	Un	So	So	10x5	9x4	34	
38 ^{1/4}	41	4	4	6.2	4.0	3.2				Un	So	So	10x5	7x2 ^{1/2}	35	
30	48	2	2	3.2	3.2	1.6				Un	So	So	10x5	9x4	36	
62	6	41 ^{1/2}	3	7	6.5	5.2		20	8	Opt	Cu	Cu	13x3 ^{1/2} x8 ^{1/4}	16 ^{1/2} x4x11 ^{1/2}	37	
62	5	62	3	1	10.0	2.3		20	3	Opt	Cu	Cu	14x4 ^{1/2} x8	21x5x15	38	
62	5	62	3	1	10.0	2.3		20	5	Opt	Cu	Cu	14x4 ^{1/2} x8	21x5x15	39	
108	32	3	1	13.0	3.0			14	7	Opt	Pn	Pn	6.00/9	6.00/16	40	
129	52 ^{1/2}	4	1	13.9	1.8			14	7	Opt	Pn	Pn	6.00/9	7.50/16	41	
129	40	4	1	13.1	1.7			14	8	Opt	Pn	Pn	6.00/9	6.50/16	42	
129	40	4	1	13.1	1.7			14	5	Opt	Pn	Pn	6.00/9	6.50/16	43	
159	34 ^{1/2}	103	4	1	16.0	2.1			AJ	Pn	Pn	7.50/16	7.50/16	44		
127	11 ^{1/4}	4	1	16.3	2.7			20	7	Au	Pn	Pn	7.50/16	8.25/20	45	
74	9 ^{1/2}	58	4	4	7.0	7.0	3.1	3.1	7	Opt	Cu	Cu	15 ^{1/2} x5x10	21x5x15	46	
74	9 ^{1/2}	58	4	4	7.0	7.0	3.1	3.1	7	Opt	Cu	Cu	15 ^{1/2} x5x10	21x5x15	47	
46 ^{1/2}	16 ^{1/2}	46	2	2	3.2	3.2	2.3	2.3	AJ	So	Cu	10x4x8 ^{1/4}	10 ^{1/2} x8x5	48		
40	42	2	2	4.5	4.5					So	So	8x3	10 ^{1/2} x5	50		
48	46	4	4	7.0	7.0	4.0	4.0	15	5	Opt	So	So	12x3 ^{1/2}	16x4	51	
70	13	30	4	4	7.0	7.0	4.0	4.0	15	5	Opt	SCP	SCP	16x4x11	20x4x16	52
98	37	72	4	4	6.0	6.0	5.0	5.0	15	5	Opt	SCP	SCP	15x5x11 ^{1/4}	20x5x16	53
			4	4	6.0	6.0	5.0	5.0	15	5	Opt	SCP	SCP	15x5x11 ^{1/4}	20x5x16	54
51	0	55	Var	Var	12.0	12.0	8.0	8.0	32	20	Un	Cu	Cu	16 ^{1/2} x4	4.00/18	55
71	59	3	1	10.0	2.0	10.0	2.0		20	10	Opt	Cu	Cu	15 ^{1/2} x5x10	15 ^{1/2} x5x10	56
42 ^{1/2}		2	2	3.4	3.4	2.8	2.8	15	10	Opt	So	So	10x3	9x5 ^{1/2}	57	
38 ^{1/2}		2	2	3.2	3.2	2.6	2.6	15	10	Opt	So	So	10x3	9x5 ^{1/2}	58	
			2	3.0	3.0	2.0	2.0			Opt	So	So	10x3	10x3	59	
			2	3.0	3.0	2.0	2.0			Opt	So	So	10x3	10x3	60	
			2	3.0	3.0	2.0	2.0			Opt	So	So	10x3	10x3	61	
			2	3.0	3.0	2.0	2.0			Opt	So	So	10x3	10x3	62	
			3	3	4.0	4.0	3.0	3.0			Opt	So	So	10x3	10x3	63
			3	3	6.0	6.0	4.5	4.5			Opt	So	So	10x3	10x3	64
46	3	36	(6)	(6)	5.0	5.0	4.0	4.0	29	10	Opt	Cu	Cu	10 ^{1/2} x7	10x7	65
56	6	48	(6)	(6)	5.0	5.0	4.0	4.0	20	10	Opt	Cu	Cu	10 ^{1/2} x7	7x5	66
54 ^{1/2}		3	1	8.0	2.1	5.1	2.1			Opt	So	Cu	15x5	21x5	67	
54 ^{1/2}		3	1	8.0	2.1	5.1	2.1			Opt	So	Cu	15x5	21x5	68	
62		3	1	9.0	2.7	5.7	2.7			Opt	PC	PC	(8)	(10)	69	
62		3	1	9.0	2.7	5.7	2.7			Opt	PC	PC	(8)	(10)	70	
69		64	4	4	6.3	6.3	3.5	3.5			Opt	Cu	Cu	16 ^{1/2} x4	21x5	71
60 ^{1/2}		59	3	3	7.0	7.0	4.0	4.0			Opt	So	So	15x3 ^{1/2}	18x4	72
72		4	4	6.5	6.5	3.0	3.0			Opt	Cu	Cu	22x6	22x6	73	
100		4	4	7.5	7.5	4.2	4.2			Opt	Cu	Cu	15 ^{1/2} x8	21x7	74	
125		4	1	12.5	1.7	4.3				Opt	Pn	Pn	6.00/7	7.00/16	75	
125		4	1	12.5	1.7	3.3				Opt	Pn	Pn	6.00/9	7.00/16	76	
125		4	1	12.5	1.7	2.0				Opt	Pn	Pn	6.00/9	7.00/16	77	
121	34	82	3	1	16.9		19.0			Un	Pn	Pn	6.00/9	7.50/16	78	
238	122	112	4	4	18.1		22.2			Un	Pn	Pn	9.00/20	9.00/20	79	
294	148	4	4	17.0		27.0				Un	Pn	Pn	16.00/24	16.00/24	80	
			Var	2		2.5			Var		So	So	12x3 ^{1/2}		81	
64	9 ^{1/2}	56	2	2	10.0	11.5		2.5		E	Cu	Cu	17x4 ^{1/2}	22x8	82	
64	9 ^{1/2}	56	2	2	10.0	11.5				E	Cu	Cu	17x4 ^{1/2}	22x8	83	
64	9 ^{1/2}	56	2	2	10.0	11.5				E	Cu	Cu	17x4 ^{1/2}	22x8	84	
64	9 ^{1/2}	56	2	2	10.0	11.5				E	Cu	Cu	17x4 ^{1/2}	22x8	85	
78	57	4	4	6.5	6.5	5.5	5.5			Opt	Cu	Cu	16 ^{1/2} x5x11 ^{1/4}	21x5x16	86	
61 ^{1/2}		4	4	7.5	7.5	4.5	4.5			Opt	Cu	Cu	16x3 ^{1/2}	20x5	87	
43 ^{1/4}	43 ^{1/4}	2	2	3.0	3.0	2.0	2.0	10	5	Opt	Cu	Cu	10 ^{1/2} x5	10 ^{1/2} x5	88	
		2	2	3.0	3.0	2.0	2.0	5	3	GT	Cu	Cu	10 ^{1/2} x5	10 ^{1/2} x5	89	

ABBREVIATIONS

- * Including battery.
- † Not including towing eye.
- * Combination steering and drive wheels.
- Load wheels.
- * Plus.
- (1) - 250 to 275.
- (2) - 250 to 450.
- (3) - 300 to 360.
- (4) - 200 to 500.
- (5) - 340 to 500.
- (6) - Two standard; three optional.
- (7) - 36 or 45.
- (8) - 4.00/8 or 10^{1/2}x4.
- (10) - 4.50/12 or 21x5.
- (11) - 450 to 550.
- (12) - 550 to 600.
- (13) - 30 to 36.
- (14) - 200 to 700.
- AJ - Automatic jaw.
- AL - Electric Auto-Lite Co.
- App - Appropriate.
- Au - Automatic.
- Bal - Baldor Co.
- Chr - Chrysler Corp.
- Con - Continental Motors Corp.
- Cu - Cushion.
- DE - Diesel engine.
- E -

POWERED END-LOADING (STRADDLE) CARRIERS

Due to space limitations basic models only are shown for each company represented.

MAKE AND MODEL	Maximum Lead Cap. (Lb.)	Load Spacing* (In.)		Package Size* (In.)		Service Weight (Lb.)	Power Type	Overall Dimensions (In.)			Wheels				Turning Radius (In.)				Load Shoes				Engine **	Transmission		Running Speeds (mph)											
		Maximum Height	Inside Height	Inside Width	Width			Height to Top of Steering Wheel	Length	Width	Frame Length	Wheel Base	Number Spoor	Number Drive	Tire Sizes		Without Load		With Forward Load		Outside	Inside		Length (In.)	Width of Face (In.)		Maximum Lin (from Ground)	Shoes Swing? (Yes or No)	Boltwise Width (Atward Trunk)	Make and Model	Horsepower	Number Speeds Forward	Number Gears	Maximum Forward (Unlimited)	Maximum Forward Load		
															Front	Rear	Inside	Outside	Inside	Outside																	
																																				Front	Rear
Geringer	4MH	14,000	65	57	52	54	10,600	G	150	110	142	87 1/2	150	110	142	9,00x20	9,00x20	116	116	116	116	124	9	28	No	54	Ford	160	4	4	25	30	25	30	1		
	SMH	14,000	66	57	52	54	11,100	G	150	112	142	87 1/2	150	112	142	9,00x20	9,00x20	116	116	118	118	136	9	28	Yes	54	Ford	160	4	4	25	30	25	30	2		
	RM-20	20,000	70	57	52	58	11,750	G	150	122	142	87 1/2	150	122	142	9,00x20	9,00x20	116	118	126	126	136	9	28	Yes	54	Ford	160	4	4	25	30	25	30	3		
	SM-20	20,000	70	57	52	58	12,000	G	176	119	168	106	176	119	168	9,00x20	9,00x20	138	138	138	138	143	6	28	Yes	54	Ford	160	4	4	25	30	25	30	4		
	SRH	30,000	72	59	54	58	14,200	G	173	132	173	111 1/2	187	132	173	11,00x20	11,00x20	143	143	143	143	143	6	26	Yes	66	Ford	160	4	4	30	35	30	35	5		
Prest Fork	PF-30	20,000	72	62	58	60	12,500	G	187	138	176	108	187	138	176	11,00x20	11,00x20	162	162	162	162	162	9	28	Yes	No B	Ford	160	4	4	30	35	30	35	6		
	SC-40	50,000	72	62	58	60	27,800	G or D	212 1/4	111	110 1/2	110 1/2	156	136	162	14,00x20	14,00x20	162	162	162	162	162	10	21	Yes	60	Cont	180	4	4	20	30	30	35	7		
		20,000	81	57	52	66	10,950	G	176	125	160	136	162	136	162	9,00x20	9,00x20	148	148	148	148	148	9	25	Yes	54	Mer	160	4	4	20	30	30	35	8		
		30,000	79 1/2	68	64	66	15,000	G	191	129 1/4	173 1/2	129 1/4	187	148	162	11,00x20	11,00x20	170	170	170	170	170	10	22	Yes	66	Inter	180	4	4	30	35	30	35	9		
		30,000	77 1/2	68	64	66	15,150	G	202	129 1/4	199 1/2	129 1/4	187	148	162	11,00x20	11,00x20	170	170	170	170	170	10	22	Yes	66	Inter	180	4	4	30	35	30	35	10		
Rose Dr. (Clark)	71-6657	10,000	65	57	52	54	8,200	G	147	104	136	88	147	104	136	8,00x20	7,53x15	42	156	78	193	117	6	12	No	54	Mer	91	3	3	32	28	12	11	11		
	81-7256	20,000	72	57	52	60	12,000	G	150	138	142	90	150	138	142	10,00x20	10,00x20	127	127	127	127	127	6	18	Yes	54	Mer	91	4	4	40	45	40	45	12		
	83-7268	40,000	72	56	52	60	16,650	G or D	170	117	184	104	170	117	184	11,00x20	11,00x20	136	136	136	136	136	6	21	Yes	66	Mer	131	5	5	45	50	45	50	13		
	95-7256	30,000	72	56	52	60	16,650	G	200	117	184	104	200	117	184	11,00x20	11,00x20	146	146	146	146	146	6	21	Yes	66	Mer	142	5	5	45	50	45	50	14		
	99-14498	30,000	72	56	52	60	16,650	G	230	186	149	146	230	186	149	14,00x20	14,00x20	146	146	146	146	146	6	21	Yes	66	Mer	142	5	5	45	50	45	50	15		
81-7286	100-7282	50,000	72	62	58	60	23,700	G or D	210	117	174	162	210	117	174	162	14,00x20	14,00x20	232	232	232	232	232	11	6	25	Yes	60	Mer	142	4	4	40	45	40	45	16
		20,000	72	56	52	66	12,500	G	180	114	160	136	180	114	160	10,00x20	10,00x20	127	127	127	127	127	6	18	Yes	No B	Mer	91	4	4	40	45	40	45	17		
		20,000	78	56	52	66	16,500	G	189	120	166	150	189	120	166	10,00x20	10,00x20	124	124	124	124	124	6	18	Yes	54	Mer	91	4	4	40	45	40	45	18		
	81-7286	20,000	75	56	52	66	16,500	G-E	189	120	166	150	189	120	166	10,00x20	10,00x20	124	124	124	124	124	6	18	Yes	54	Mer	91	4	4	40	45	40	45	19		
	8271-3746	20,000	55	46	50	15,000	G-E	164	104	98	148	99	92	164	104	98	38x12x39	28x7x22	46	178	96	6	12	2	RPR	L-2	10	4	8	4	8	4	20	20			
8471-3746	20,000	55	46	50	15,000	G-E	164	104	98	148	99	92	164	104	98	38x12x39	28x7x22	47	178	96	6	12	2	RPR	L-2	10	4	8	4	8	4	20	20				

-15 to 42.
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RP-Rack

Specifications Reprints

This entire Industrial Truck Specifications section, from Pages 71 to 94, is being reprinted in booklet form. The 24-page, stiff-cover booklet is being made available at 75¢ a copy. Some 5,000 of the 1955-56 Specifications reprints were distributed last year to traffic managers, warehousemen, handling and packaging engineers, and others engaged in the business of physical distribution. Write for quantity lot prices. Send your orders to:

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CONVENTIONAL HIGH-LIFT FORK TRUCK

The high-lift trucks, which made possible the fork truck and pallet system of handling, first appeared about 1927. They were powered by storage batteries and electric motors. Internal-combustion engines and gas-electric units were later developments.

Certain dimensions of fork trucks are important from an operational standpoint. These critical dimensions are indicated in the accompanying sketches. It should be noted that back rests and carriages may influence the height of piling if they extend above the mast when the lat-

ter is fully elevated. Where the overhead ceiling is so low that there is little clearance between it and the top of the highest palletized load, it may be impossible to place the top tier of pallets in pile if the backrest or the carriage is too high.

CONSTRUCTION AND MECHANICAL DETAILS

Many manufacturers offer a complete line of trucks ranging in capacities from, for example, 1,000 to 6,000 lb. These frequently include both electric or fuel-powered machines. In the following discussion we refer to gasoline models, but it should be understood that many present-day machines also can be powered by newer fuels such as diesel oil or LP-gas.

The complete lines referred to usually are made up of companion machines with the same basic construction elements, modified to accommodate the type of power plant and for the capacities involved.

In studying the diagrams the reader will notice that the same functional member may be designated by different names. This is due to trade customs. For example, the uprights of medium-capacity trucks usually are referred to as masts, while those of larger capacities are called towers.

The frame, like the chassis of an automobile, is the unit around which the entire machine is constructed. It must be rugged, yet light as possible. There are as many different shapes for frames as there are truck manufacturers, but they all serve the same function.

Later in this installment, various drive arrangements are shown and the reader, by studying the accompanying sketches, will note the modifications required in the frame construction to accommodate the various setups.

LIFTING MECHANISMS

Although the hydraulic lifting mechanisms of fork trucks differ in construction from those utilized in stackers, they operate on the same general principles.

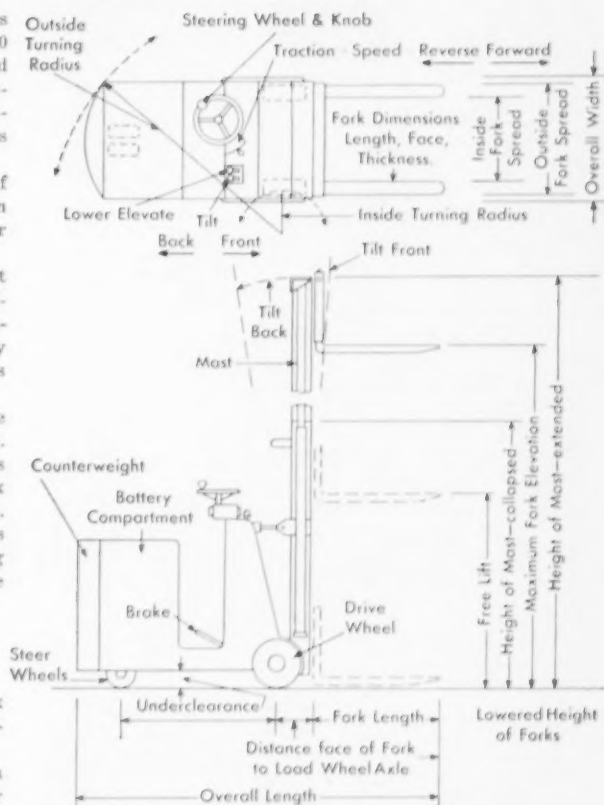
The essential parts consist of one or more masts, a hoisting cylinder (or cylinders) with a yoke for the idler sprockets or sheaves (depending upon whether chains or cables are utilized), the carriage and the forks.

In machines designed for heavy service there are more rollers utilized to overcome friction and meet the greater thrust forces imposed.

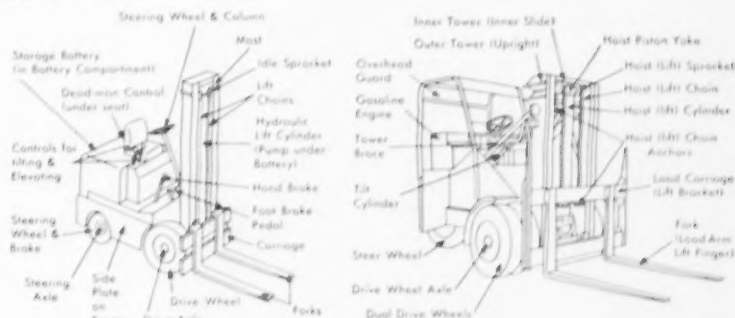
An alternate arrangement eliminates the hydraulic system—elevation being secured entirely through the use of a chain drive.

Hoisting mechanisms are designed to give the operator unobstructed vision.

The principles of hydraulics which underlie the action of all oil-actuated lifting systems, as well as many other kinds of materials handling machines, are fully covered in a special section of this text covering various simple units from which others are developed.



PRINCIPAL PARTS AND CRITICAL DIMENSIONS OF A HIGH-LIFT ELECTRIC FORK TRUCK



PARTS OF ELECTRIC AND GASOLINE FORK TRUCKS

HOW HYDRAULIC SYSTEMS FUNCTION

The hydraulic pump is driven by a belt. It draws oil from the storage tank and discharges it under high pressure to the hydraulic control valve through which the operator, by shifting a lever, directs the flow of oil to the tilt cylinder or to the lift cylinder, depending upon the function desired. The pipe manifold acts as a means of passing oil from the front or the rear end of the tilt cylinder to provide forward or backward tilting. The low pressure line leads from the hydraulic control valve back to the storage tank and thus provides a bypass for the oil when the controls are in neutral.

In electric machines, the hydraulic pump is driven by its own motor. In fuel-powered machines it is driven by a belt from the drive engine.

Hydraulic pumps of vane and gear types are more generally employed in these systems than reciprocating varieties. Single-acting types of the latter discharge oil only during the up stroke of the piston, while double-acting types discharge during both the up and the down strokes.

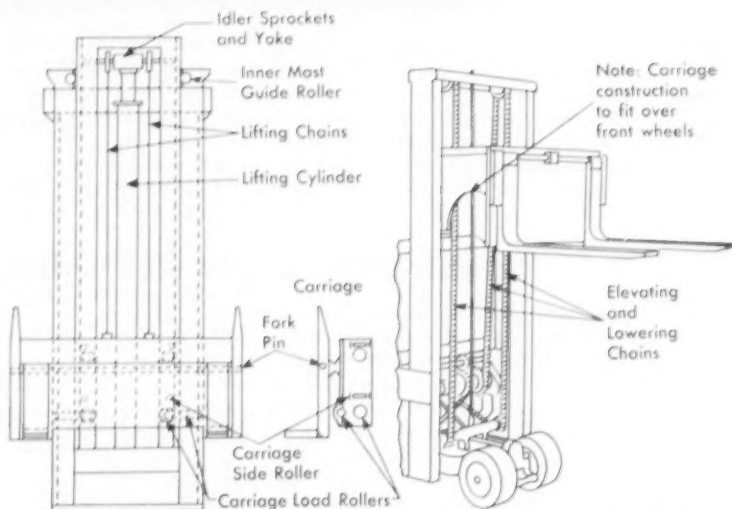
The check valve used with reciprocating pumps permits the flow of oil in one direction only. The ball is held against a ground seat by a spring, except when oil pressure lifts it from the seat.

The spools on the shaft of the lift-tilt control valves open and close ports to divert the flow of oil to the respective cylinders or to bypass it to the storage tank (sump). Should hydraulically-actuated attachments be added to the truck, additional spools and ports are provided to feed oil under pressure to the correct cylinders.

Free lift is the distance that the forks of a machine can be elevated before telescopic action begins, that is, before the inner mast starts to rise.

As shown in the sketch, when the ram piston starts to rise, it lifts the carriage through a distance twice that covered by the piston itself. When the piston reached the cross member of the slide (inner mast), the yoke lifts the cross member and both it and the carriage are elevated simultaneously.

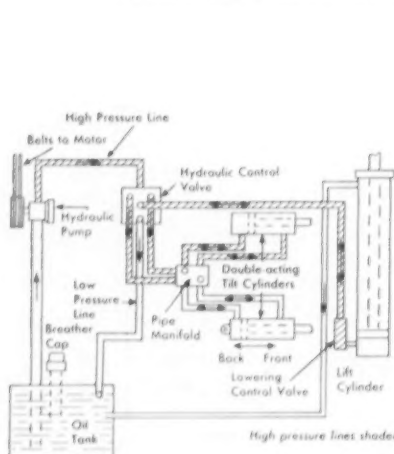
It is the first portion of the lifting cycle that provides free lift—a very useful feature. For example, it makes possible the operation of fork trucks in such locations as the interior of box cars, where headroom is low and double-tiering is required.



MECHANICAL PARTS OF A TYPICAL ELEVATING SYSTEM

CHAIN ELEVATING MECHANISM

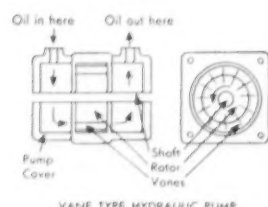
HYDRAULIC AND CHAIN ELEVATING SYSTEMS



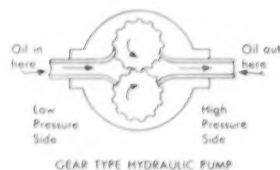
SCHEMATIC REPRESENTATION OF THE HYDRAULIC SYSTEM

THE HYDRAULIC SYSTEM AND THREE TYPES OF PUMP

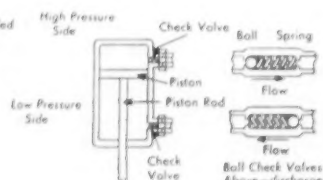
The sketch illustrating free lift also explains another phenomenon—why the carriage and the forks rise twice as far but with half the speed of the hydraulic ram. The reason is that one of the ends of the chains or of the cables are fixed to the truck's frame. The other ends, fastened to the carriage, are moved upward as the piston rises. Since these chains or cables pass over the sprockets or sheaves, the free ends must move up two inches for every inch the yoke advances in order to provide enough chain or cable on both sides of the yoke.



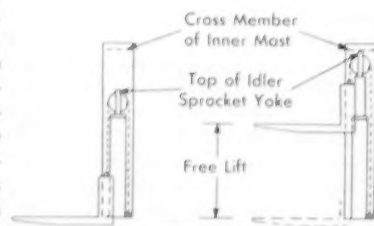
VANE TYPE HYDRAULIC PUMP



GEAR TYPE HYDRAULIC PUMP



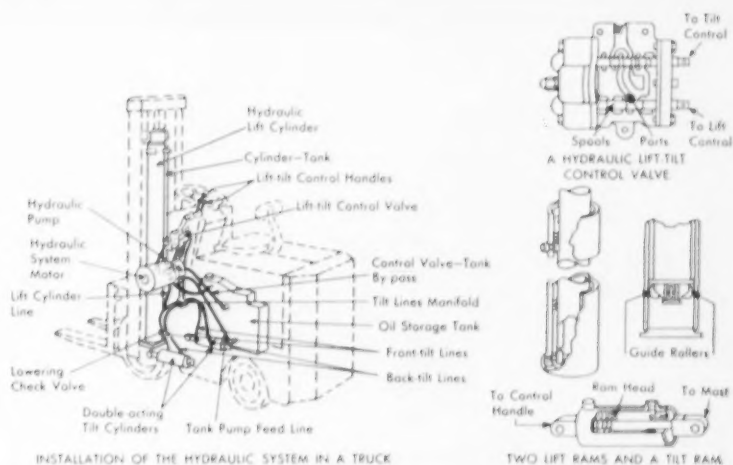
A SINGLE ACTION RECIPROCATING PUMP WITH INTAKE AND DISCHARGE CHECK VALVES



SCHEMATIC REPRESENTATION OF FREE LIFT

MORE DETAILS OF THE HYDRAULIC SYSTEM

INSTALLATION AND SOME PARTS OF THE HYDRAULIC SYSTEM

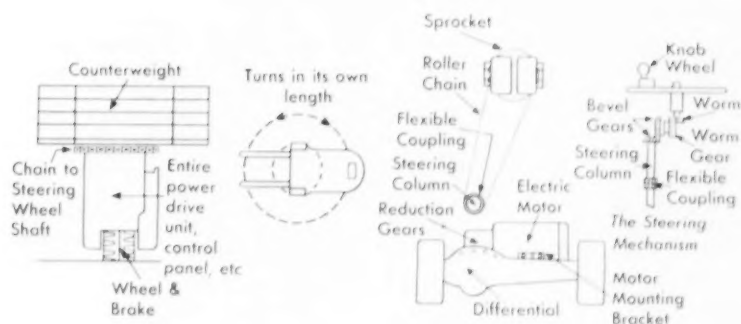


INSTALLATION OF THE HYDRAULIC SYSTEM IN A TRUCK

TWO LIFT RAMS AND A TILT RAM

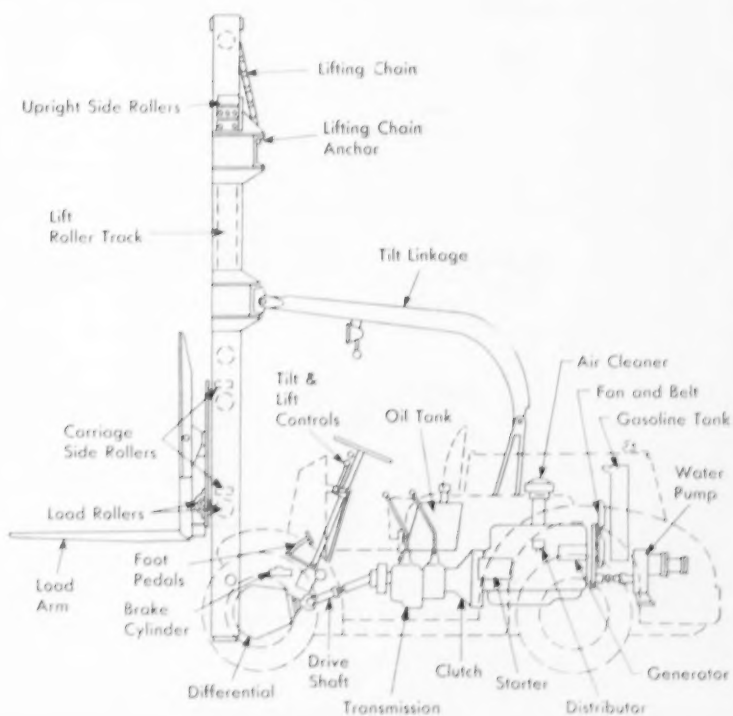
THE POWER PLANT AND OTHER AUTOMOTIVE PARTS

REAR END AND FRONT END ELECTRIC DRIVES WITH REAR STEERING

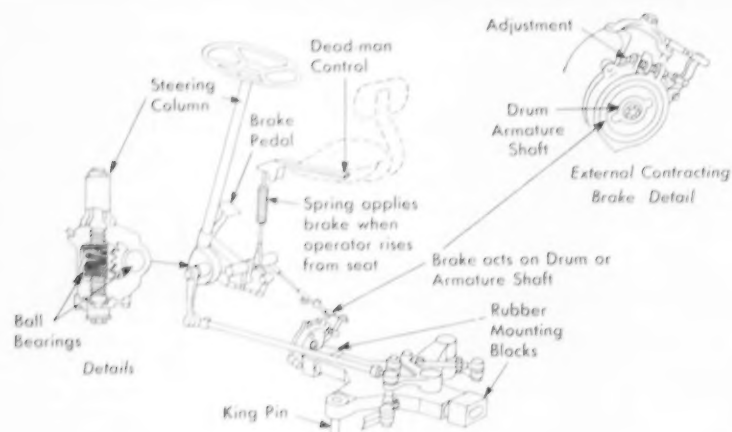


HOW FORK TRUCKS FUNCTION

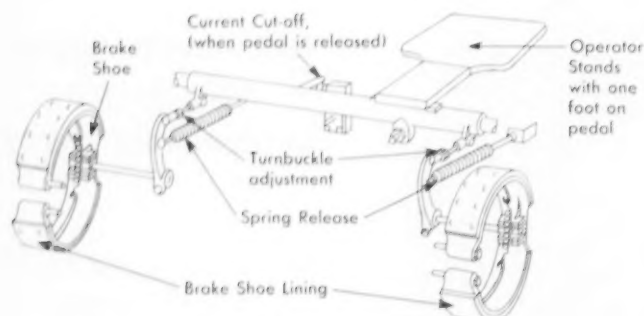
WHAT MAKES THE WHEELS GO 'ROUND IN A GASOLINE TRUCK



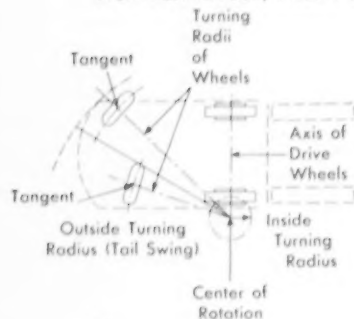
Self-Loading Systems, conf.



STEERING MECHANISM AND ARMATURE BRAKE

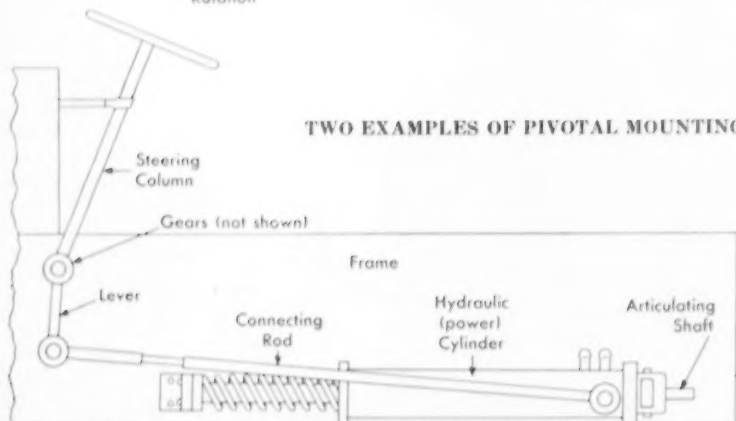


NORMALLY APPLIED, INTERNAL EXPANDING BRAKE



STEERING AND BRAKING MECHANISMS

WHY REAR WHEELS ARE NOT PARALLEL WHEN STEERING



TWO EXAMPLES OF PIVOTAL MOUNTING

When a machine is designed for any type of power plant, the only physical changes necessary are those in the frame to accommodate the particular equipment and the transmission. Those trucks which are intended exclusively for electric drive usually can be obtained with either a battery and d-c motor setup or with a gasoline-electric unit. In such cases, only slight changes are required to provide for the larger compartment needed for the latter.

The power plant-transmission-differential problem is much simpler in electric than in fuel powered trucks.

Electric trucks are very close-coupled. The motor is connected almost directly to the drive wheels. No transmission mechanism is required because direction and speed changes are effected electrically rather than by mechanical means. The operator merely has to move a lever to start and to accelerate in either direction.

Rear wheel drive is confined exclusively to electric trucks. The motor actuates the drive wheels through reduction gears. The motor and the drive turn together by a simple chain connection to a gear on the steering column.

Another type of drive is through a worm and gear.

When the rear wheels are set wide apart more complicated steering mechanisms are required in order to turn the wheels as a team. When they are set in a turned position the two wheels are not exactly parallel. This is because their turning center does not fall inside, but is outside the frame (see the illustration at left for details).

FUEL-POWERED TRUCKS

Except that the driver rides facing backwards, gasoline trucks are similar to other automotive vehicles.

The modern trend is to have the controls of fork trucks conform with those of standard automotive equipment regarding gear shifting, etc.

Hydraulic braking has become general and hydraulic (power) steering is fast becoming standard on heavier machines. Both add materially to the ease of truck operation.

MORE ABOUT THE TRUCK'S WORKING PARTS

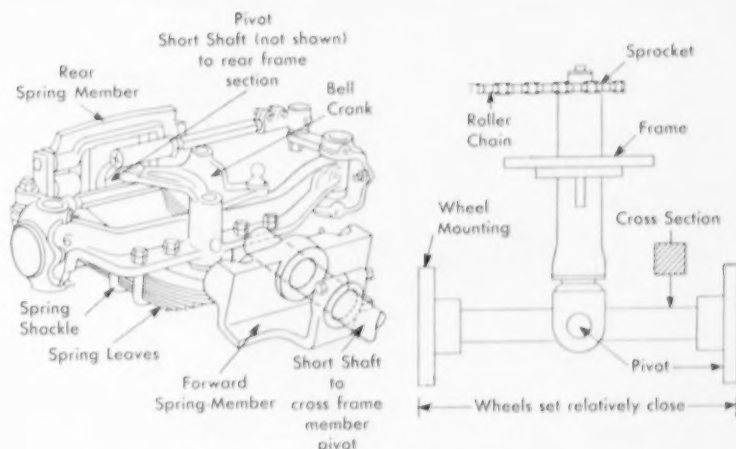
Pivotal-mounted steering mechanisms have been developed to provide better going over rough terrain and to improve truck stability. They are utilized in both electric and gasoline models.

Steering mechanisms are more than the means for maneuvering a truck. If properly designed they also contribute to the stability of the machine.

TYPES OF BRAKES

Both dynamic and friction brakes are used with electric trucks. Dynamic braking is electrical. It functions through controlling the drive motor. Friction brakes are mechanical and are applied either to the drive wheels or around the drive shaft. Wheel types are either internal or external. The former act on the inside, the latter on the outside of the brake drum.

Dead-man control is provided if the operator leaves his position on the truck. When he does a brake is applied. In standing trucks there is a broad pedal which the operator must keep depressed in order to drive the



EXAMPLE OF POWER, HYDRAULIC STEERING BOOSTER

truck. In machines where the operator is seated, the seat itself serves the same purpose. Connections are made and the brake released when the driver is seated, but a spring lifts the seat when the driver rises—the current connection is broken and the brake applied, both automatically.

Solid and semi-pneumatic tires are used most generally for inside operations, pneumatics for outside jobs. The pneumatics have relatively larger diameters than other types, and, for equivalent load capacities, require wider wheel bases and have greater turning radii.

TORQUE CONVERTERS

Torque converters originally were applied in the heavy traction field. They were next adopted by the industrial railroad locomotive manufacturers. More recently they have been made available in fork trucks.

In the conventional type of automotive transmission the flywheel reduces the effects of the successive impulses made by explosions in the engine cylinders. In some setups a fluid coupling acts as the intermediary link between the flywheel and the drive. In others, the connection is mechanical. A clutch provides the means of connecting and disconnecting the engine and the transmission. The transmission is a group of gears which, when meshed together in different ways, provide forward and reverse motion as well as various speeds to the drive axle.

Clark Manufacturing Co., manufacturers of the two

types of torque converters illustrated here, explain torque conversion as the "multiplication of power." Torque is the turning force of the engine. The two types illustrated employ different means for accomplishing conversion but both eliminate the need for a clutch and for the conventional type of gear shifts. Some of the gears in each type are continually meshed and gear-shifting is simplified.

One of the features of gasoline truck operation which has been most troublesome in the past has been the clutch. Fork trucks are so used that they must make many starts and stops and often are required to inch their way into position. These operations are hard on clutches, and it is necessary to reline them frequently. Introduction of torque converters has removed a bothersome and time-consuming factor in gasoline truck overall operation.

TWO TYPES OF TORQUE CONVERTERS

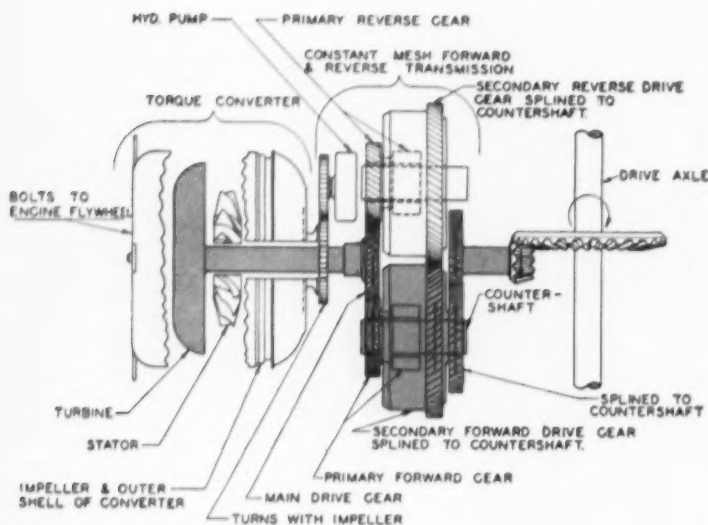
Hydraulic torque converters transmit power through kinetic-mass energy—the mass and velocity of moving oil. Essential parts are the impeller and its outer shell. The impeller is bolted to the flywheel of the engine and rotates with it. The converter is completely filled with oil kept under constant pressure by the hydraulic pump, which is driven by a gear in the transmission portion of

the system. The stator swirls the oil against the turbine, which is integral with the main drive shaft. This latter carries the main drive gear, which is constantly meshed with the hydraulic pump gear and with the primary forward and primary reverse gears. Both sets of primary gears are mounted on separate countershafts.

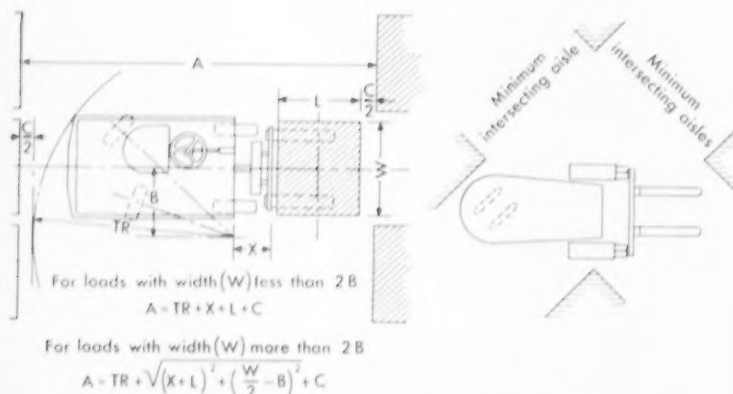
When motion is forward, the secondary forward drive gear (which is

splined to the forward countershaft in such a way that it has longitudinal motion along that shaft) is pushed by a piston so that it engages the primary forward gear and these two forward gears then turn as a unit. The sketch shows the forward drive setup with the shaded areas those that are in motion.

For driving in reverse, the forward piston is disengaged and the reverse



THE CLARK HYDATORK DRIVE



FORMULA FOR WIDTH OF 90-DEG STACKING AISLE

STABILITY OF FORK TRUCKS

When load capacity calculations were discussed above, no mention was made of the complications which are introduced by momentum when fork trucks are equipped with forward and backward tilting. Normally the center of gravity of a truck system is relatively low, but when a load is elevated, so is the entire system's center of gravity.

The ratio of the distance the center of gravity rises to its horizontal distance from the front axle is called the stability factor. It should be as small as possible. The U. S. Navy stipulates that the limit shall be $7\frac{1}{2}$ to 1.

When a mast is tilted forward, the center of gravity of the system again is changed. More counterbalancing weight must be added to compensate for this factor.

When a truck is set in motion an entirely new set of factors enter the picture. These are called dynamic forces

piston joins the primary and secondary reverse gears so that power is transmitted in the reverse direction to the secondary forward drive gear. The latter now functions as a reverse gear.

In neutral, both primary gears turn freely on the drive shaft. No power is transmitted to the wheels.

In this arrangement, two magnetic coils, each consisting of eight poles, are bolted to the flywheel and turn with it. Current flows in one direction through one coil and in the opposite direction through the other, depending upon whether the driver wants the truck to move forward or in reverse.

Under each magnetic coil is a rotor, separated from its coil by an air gap. When current flows through one of the coils a strong magnetic field is set up and as this field moves forward with the rotation of the coil, the rotor cuts across the field, becomes magnetized by induction and rotates with the field.

The rotor is attached to a constant-mesh transmission which is made up of selective high and low gears. The latter are brought into play only when unusual conditions warrant. The selector switch on the steering column takes care of sending the current to the proper magnetic coils for forward or reverse drive.

AISLE WIDTH FORMULAS

Specification sheets for most fork trucks now contain information on aisle width requirements—both for intersecting aisles and for 90-deg piling.

The accompanying formulas and diagrams are useful when such information is not supplied in the literature for a given truck. They provide for a working clearance (C) which is important for good maneuvering.

and their effects are extremely complicated. In fact, many of them are unpredictable.

In addition to forward tipping, there always is the possibility of side tipping if the center of the system moves outside the base of the machine.

These seemingly theoretical considerations have their practical effects on the design of fork trucks. There are only two ways to increase the stability of these machines—add more counterweight or increase the length of the frame so that the counterweight will be placed farther from the fulcrum. The design that leaves the drafting board and emerges as a finished truck is a compromise.—It has adequate fore-and-aft stability, but is sufficiently broad abeam so that it will not turn over sideways when the load is elevated with the truck standing on a slight crosswise incline.

WHICH SOURCE OF POWER?

Design engineers have developed many improvements and new fuels have narrowed the gap between electric and fuel-powered trucks. Several manufacturers now produce both types, and the decision can be left where it properly belongs. The right power largely depends upon operating conditions. Dollars and cents are not always the determining factors in selecting the source of power for a truck.

Ambient conditions are important. Electric trucks hold the key position for operations in congested, poorly ventilated areas where the fumes from gasoline trucks could be harmful. However, improvements in catalytic exhaust agents and new fuels have opened a wider field to fuel trucks than previously was considered practical.

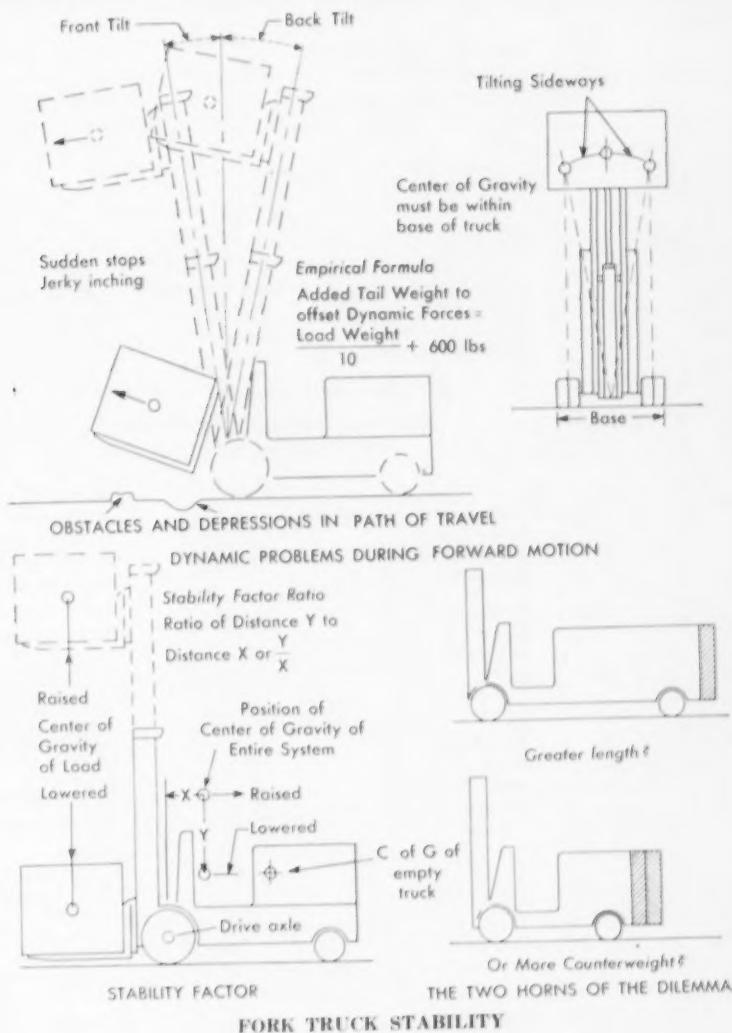
Trucks powered by internal-combustion engines find their most general application on open-air assignments. This means in such locations as yards, freight and marine terminals. They also have an advantage in that they do not have to return to base for recharging of their batteries.

Occasionally, as in cold storage operations, the commodities involved are sensitive to odor. Electric trucks are the choice in such situations. Even though the exhaust of a fuel-powered engine may be controlled, there always is present some odor from the hot engine itself.

Electric trucks operate most satisfactorily over good running surfaces. Trucks with internal-combustion power plants can be equipped with wheels and tires that perform well on rough terrain. They can be run over railroad track crossing. They are superior over snow. Further, electric trucks usually are limited to 10 per cent grades, whereas fuel-powered machines can negotiate any reasonable incline.

Fuel powered trucks are less sensitive to ambient temperatures than electric trucks. Batteries and charging equipment function best under normal temperature conditions.

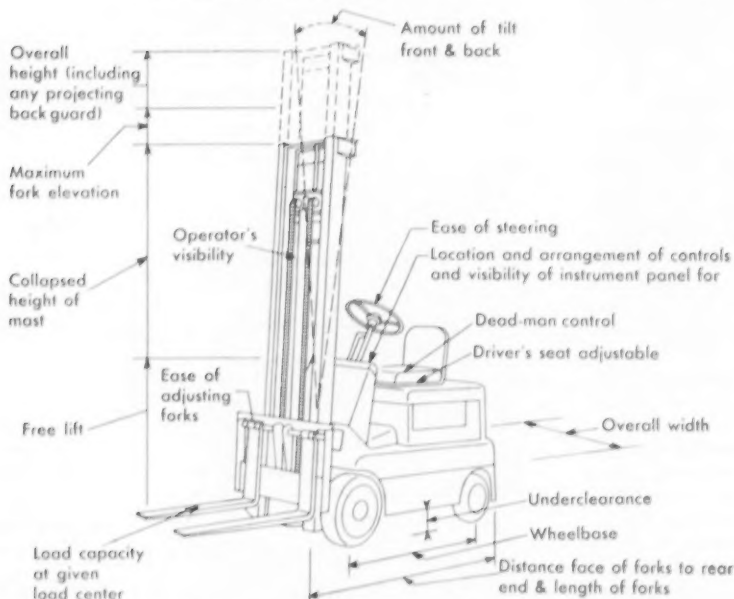
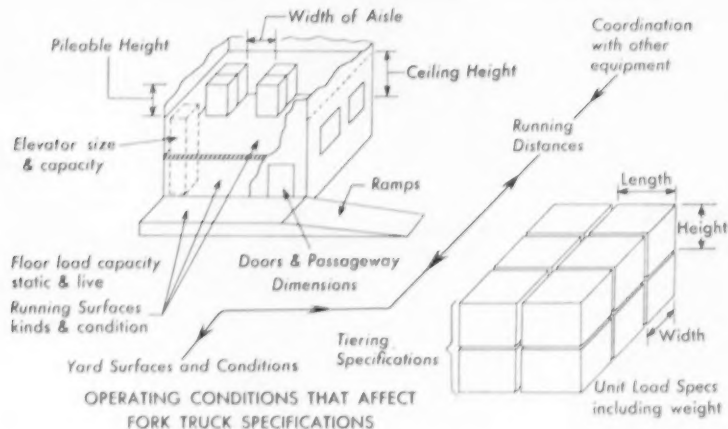
Electric trucks generally are more satisfactory for short cycle operations. These usually involve relatively more idling time than operations over extended periods. When gasoline trucks are idling they heat up and incomplete combustion results—more carbon monoxide is produced.



When clutches are used, short cycle operations subject them to considerable abuse because of the many times the clutch must be engaged and disengaged. This factor has been partially overcome by the torque converters.

Materials handling is a relatively new industrial activity, particularly the phases involving loading unit loads. It is but natural that, in its early days, there was much partisan feeling about techniques and equipment. But, the industry is rapidly maturing. The men in it now realize that each type of machine has its particular function in the field. The recognition that both electric trucks and trucks with internal-combustion engines have their particular and, in some instances, their unique places in the field is further evidence that materials handling is coming of age. The same healthy attitude is shown in the matter of rivalry between different kinds of equipment. The present-day spirit is to recognize that each has its place, and that the best results are secured by coordinating the different phases for the common cause—better overall results in handling materials.

WHICH TYPE OF HIGH-LIFT TRUCK?



OPERATING CONDITIONS THAT AFFECT FORK TRUCK SPECIFICATIONS

Fork trucks are not miracle machines. There are factors in their design and construction which limit their use. Floor load and elevator capacities, narrow aisles and similar features may prevent one from using the exact machine he desires or needs.

In making a selection between different makes, there are certain intangibles which enter the picture. The reputation of the manufacturer is important. General appearance, not from the aesthetic but from the general point of view, should be considered. The matter of local service is one of the most controlling factors. It is well to investigate this subject by inquiring among local fork truck users to be sure that the local representative carries an adequate supply of spare parts and renders prompt, efficient service. Only with such a connection can one be sure of being able to keep machines running continuously and satisfactorily.

Of course, where there is a large fleet of trucks, the user is apt to have his own trained personnel for maintenance and repair. But even in this case, the local representative is important because if he maintains a complete stock of parts, the user is relieved of having to make a heavy investment in spare parts and supplies.

A TABLE OF COMPARISONS

The importance of critical dimensions has been stressed during the course of our discussion of the different types of high-lift trucks. The table on the following page shows how the different machines compare in these regards.

The models have been selected as representative of the different types. In order to make the figures comparable, all of the data given is for machines with the loads at 24-in. load center—that is, with a load 48 in. long.

HOW DIFFERENT TYPES COMPARE

Powered stackers are designed to be used where space and weight are important factors. However, they require unusually good running surfaces, particularly as to freedom from ramps and door sills. Their outrigger arms have such low clearance above the running surface that any but level operation usually is impractical.

They are utilized in warehouses for tiering and, where distances are not too great, for platform work, and for loading trucks from roadway level where there are no platforms. They are not intended for, nor are they efficient transporting equipment. They should not be used for this purpose beyond about 200 ft. One of their useful applications is for handling in production aisles, moving shop boxes, dies and similar articles between production centers and into storage rooms where tiering or lifting is part of the handling cycle. If this latter work is not involved, low-lift trucks are more effective for purely transporting assignments.

Powered, counterbalanced stackers, as we have seen above, are intermediate between the powered stackers and true fork trucks. This is particularly true as to the kind of surfaces over which they function well. They can be used over rougher running surfaces than the non-counterbalanced machines. They can negotiate ramps. However, they are heavier and longer than stackers of the same load capacity.

Originally, fork trucks were designed to tier unit loads on pallets. However, the use of attachments has extended greatly the applications of these machines, particularly in handling individual items without the use of pallets. There is a continuing effort to eliminate the investment and maintenance costs inherent in palletized operations. This accounts for the ever-increasing number of ingenious attachment devices being offered.

Electric machines seldom are used for loads over 10,000 lbs. How these and fuel-powered trucks operate under different conditions have been discussed above.

The primary function of fork trucks is for tiering unitized loads. However, they now are employed in yard work, on docks, in marine and railroad terminals and inside industrial plants and warehouses of every description for a wide variety of handling jobs. In many situations they are part of an entire system of handling. In yard work, for example, end-loading or flat-bed trucks

COMPARISON OF DATA FOR
POWERED STACKERS, POWERED COUNTERBALANCED
STACKERS AND FORK TRUCKS

Details	Powered Stackers	Powered Counter- balanced Stackers	Fork Trucks	
			Electric	Gasoline
MAXIMUM CAPACITY				
Load (lb.)	4,000	3,000	3,000	3,000
At load center (in.)	24	24	24	24
SERVICE WEIGHT				
Without battery (lb.)	3,000	3,714	4,936	5,706
With normal battery (lb.)	3,660	4,360	6,636	
MAST				
Telescopic	Yes	Yes	Yes	Yes
Tilt forward (deg.)	No	3	3	5
Back (deg.)	No	18	10	10
DIMENSIONS				
Wheelbase (in.)		53½	61	60
Distance face of forks to center line of front axle (in.)		7½	13½	12
OVERALL DIMENSIONS				
Length—less forks (in.)	28	71½	78½	74½
Length with 48-in. forks (in.)	77	119½	123½	122½
Underclearances:				
At center of truck (in.)	2	3½	4½	6½
Under mast (in.)	3		2½	2½
Free lift (in.)	11½	63	66	30
HEIGHTS (for maximum lift)				
Max collapsed (in.)	63	83	91	70½
Mast extended (in.)	127	148½	166	166½
Fork elevation—maximum (in.)	146	130	142	144
AISLE WIDTH (with 6" clearance)				
For 90-deg stacking (in.)	75	126½	129½	128½
SPEEDS (with capacity load)				
Travel—forward (mph)	3.8	2.2	8.0	9.5
Lift (fpm)	13.6	14.0	27.0	40.0
Lower (fpm)	26.0	31.0	45.0	40.0

* Assumed same as overall length with 48-in. load plus 6 in. for clearance.

SOURCE: DA Industrial Truck Specifications—1955-56.

may be utilized for the long hauls and fork trucks for tiering. They also are used in connection with conveyor setups. Overhead traveling cranes—in fact, any type of handling equipment, can be and is coordinated with fork truck operations.

In the course of time other machines have been developed or, more accurately, adapted to handling unit loads. We will, in a subsequent issue, turn from conventional trucks to others which also are used with unit loads.

Materials Handling Equipment

This series of copyrighted articles is being excerpted from a forthcoming book by the author. The 560-page volume is expected off press this summer.

Illustrated with more than 2,500 line drawings, the book depicts the mechanical principles under-

lying tools and machinery used in the science of materials handling.

Mr. Haynes has divided his book, for easy reference, into seven principal sections: Transporting, Conveying, Self-Loading, Elevating, Transferring, Bulk Handling, and Accessories.

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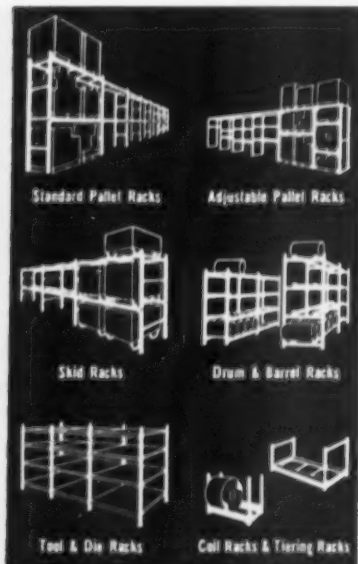


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Each of the space-saving, money-saving Lewis-Shepard Electric Trucks shown here can operate easily in 7-foot aisles, or less

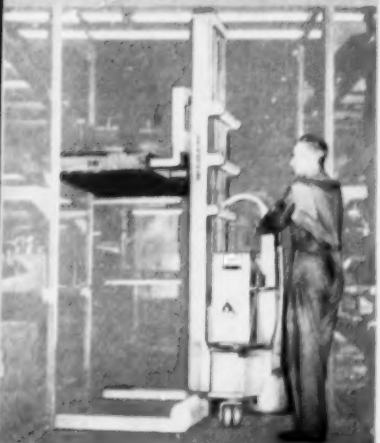
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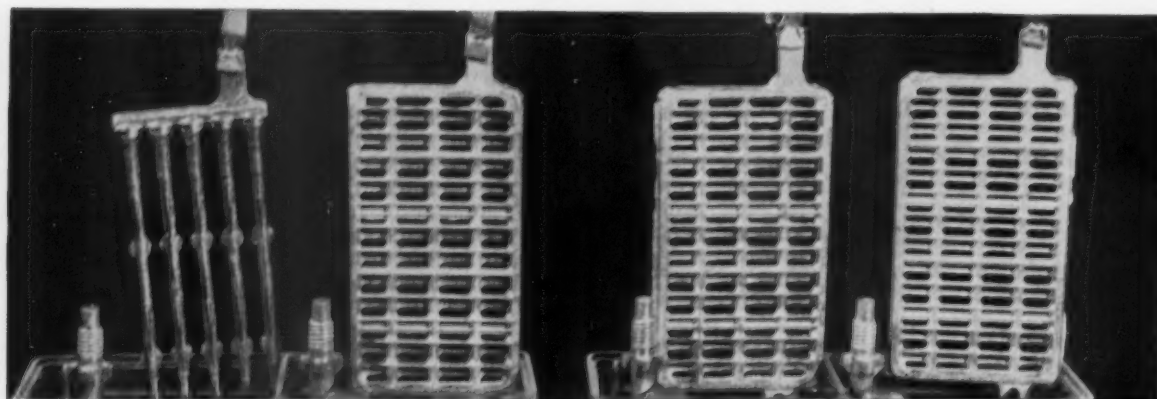
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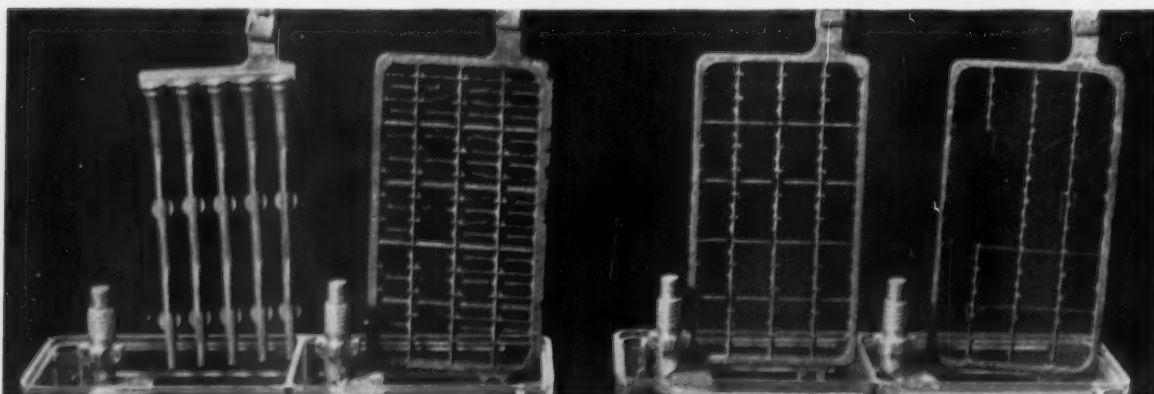


BEFORE: Silvium alloy

Alloy "A"

Alloy "B"

Alloy "C"



AFTER: Note how the Silvium grid resisted corrosion. Compare it with the other alloys.

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BATTERY FOR ELECTRIC INDUSTRIAL TRUCK, Model TH. Fits snugly into space provided on truck. Has tubular construction of positive plates, Silvium grids, "Permanized" negative plates, extra heavy connectors and all other Exide-Ironclad advantages that mean power to spare in heavy duty applications. Write for Bulletin 5161.



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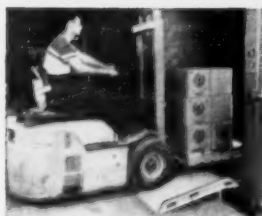
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DISTRIBUTION AGE

Solve your loading problems with Magcoa magnesium materials handling equipment

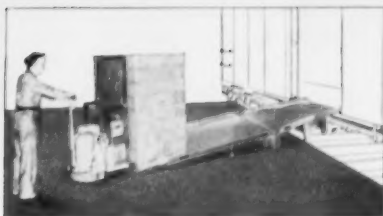
What's Your Loading Problem? Spilling and damaging of loads? Low rail dock? Low truck dock? A narrow, congested dock? Inefficient loading from ground level? Are you planning the dock for a new plant or warehouse? Or modernizing an old dock? Or, is lack of ramp facilities slowing your yard handling? Big demurrage bills? Idle lift trucks and operators? Heavy, out-of-date platform trucks which are subject to corrosion and hard to keep clean?

Look how Magcoa Dockboards solve these loading problems—



Speeds loading . . . pays for itself

Unlike heavy, makeshift steel plates, Magcoa Dockboards are light, easy to handle and are braced like a bridge to help reduce accidents—protect men, equipment and loads. Won't slip because the exclusive Magcoa safety angle holds it in position. Whatever your loading problem, there's a Magcoa magnesium Dockboard to solve it. It's rugged, permanent equipment.



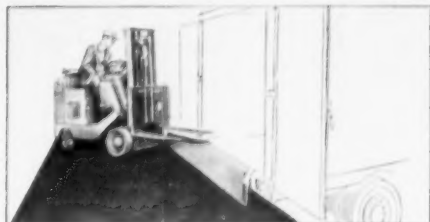
Low-rail-dock and narrow door?

A Magcoa Ramp-Dockboard solves the height differential problem by converting it into a long, smooth grade. Angle curbing at car-end of the Dockboard satisfies underclearance and sideclearance requirements; permits maximum safe use of door opening. Each section—the Ramp and the Dockboard—is moved and positioned by one man. No problem using a Magcoa Ramp-Dockboard.



Car-to-car loading?

Rugged locking devices assure a snug, slip-proof fit; let you handle loads through one car to another or to the dock. Notice the Dockboard in the far background: it has one straight curb and one flared curb—a special design to permit simultaneous loading of three cars.



Narrow, congested dock?

Flared Magcoa Dockboard solves dangerous, sharp-turn problem on narrow or congested dock because the operator can do most of the turning while on the Dockboard! Exclusive angle stop under the Dockboard holds it in place during loading and unloading.

Portable Yard Ramps solve problems, too—



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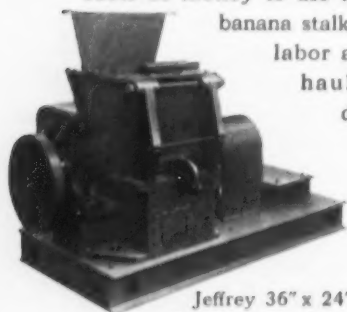
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Have you ever figured the cost of banana stalks?

This pile of stalks accumulated in a few days at a fruit warehouse.

"Space is all we've got to sell," said the manager of this fruit and vegetable warehouse. "So it costs us money to use that space to store banana stalks." Add truck-time, labor and the nuisance of hauling stalks to the dump and you'll appreciate his interest in this solution offered by Jeffrey engineers.



Jeffrey 36" x 24" Type
B-3 Green Garbage Grinder.

Install a Jeffrey grinder in the room where bananas are stripped from the stalks. Then, just as fast as they're stripped, grind them up and flush them down the sewer. It doesn't take long to save enough money to pay for the entire installation.

Jeffrey grinders are also available in smaller sizes for use in stores, restaurants, institutions. If you're wondering about the size and cost of a food waste grinder to meet your needs, write telling us about them. The Jeffrey Manufacturing Company, Columbus 16, Ohio.

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3,000-lb fork lift truck
loading cotton bales is
said to "work faster
than any truck
we have ever seen."*



You can expect double savings with an Allis-Chalmers Lift Truck

1 Saves Time and Labor

When you put an Allis-Chalmers Fork Lift Truck on the job, the first thing you'll notice is how fast and steady it works. One reason is the ease of operation. You mount from either side — no brake handle or shifting lever to interfere. The

seat is comfortable, visibility is excellent. Handling is "second nature" to even the inexperienced operator, because it drives just like an automobile. Result of this operating ease: bonus quantities of material moved every hour.

2 Slices Maintenance Costs to the Bone

"It has gone 6,000 hours and still no downtime."
"Up and down a steep ramp for 15 months — repair cost only \$1.92." Reports like these are not uncommon, as Allis-Chalmers trucks con-

tinue to amaze their owners. When repairs are necessary, the truck can be disassembled in 22 minutes — stripped for servicing in 22 seconds. Think what that means in savings.

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BH-12A

MAY, 1956

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109



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Highway . . .

(Continued from Page 37)

By multiplying the load factor by the annual mileage, we get 228 million lb, which, divided by 2,000, gives 114,000 ton-miles a year. Then by dividing the ton-mile figure into the tax increase, \$64.32, we get a cost increase increment of 0.05642 cents a ton-mile.

Where costs are not based on ton-miles, a general mileage cost factor can be calculated. This would be obtained by dividing the annual mileage of a vehicle into the \$64.32 tax increase. The resultant figure is 0.3216 cents a vehicle mile.

The same principle applies to the other vehicle types. Carrying it through for the 3-axle vehicle, we would get a tax increase of 0.02752 cents a ton-mile and 0.4404 cents a vehicle mile; using an 80 per cent load factor and 45,000 annual mileage. The tax increase on the 5-axle vehicle amounts to 0.01975 cents a ton-mile and 0.56892 cents a vehicle mile.

Incidentally, the annual tax increase for passenger cars will amount to approximately \$7.92. This figure is based on a one-cent-a-gallon increase for gasoline tax, or \$6.33, based on an average annual consumption of 633 gal. The other \$1.59 is a tire tax, based on the use of five 7.10x15 tubeless tires having an average life of 2½ yr.

Size and Weight Limits

Q: Isn't the size and weight freeze shortsighted and unrealistic? It puts the brakes on progress. It is positively unAmerican.

A: First, as you undoubtedly know, the object is preserve the government's stake in this great outlay—perhaps similar to your roping off your lawn when you reseed it in the spring.

Second, the bill contains a section requesting the Secretary of Commerce to make recommendations to Congress, not later than March 1, 1959, as to any change needed in maximum desirable sizes and weights; based on tests now planned or being conducted by the Highway Research Board in coop-

eration with the Bureau of Public Roads and the interested states. This seems to contradict any impression that the doors to progress will be closed.

Act of 1954

Q: Why do we need more highway financing? Didn't the Federal-Aid Act of 1954 provide \$175 million annually for interstate highway construction?

A: In the first place, provisions under the 1954 Act end in 1957. Next, at the present rate of modernization, it is estimated that it would take more than 50 years to reach even a moderate level of traffic efficiency.

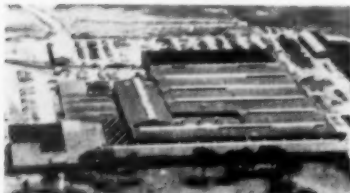
According to state estimates, needed work on the interstate system for the next 10-yr period totals about \$27 billion, of which \$12 billion is in rural and \$15 billion in urban areas.

Let's face the facts: Just since Congress took the highway modernization directive under consideration, motor vehicle registrations have increased by about 3 million, and traffic on the highways increased by about 6 per cent. Also, let's not forget that inadequate roads have cost us an estimated \$5.7 billion in accidents, loss of time, and operation costs. This cost rises by about \$200 million a year as traffic increases. In a great many cases, these accidents have involved trucks and railroads.

Finally, a lot of local business depends on continuous, aggressive highway construction. A survey by the American Municipal Association

(Please Turn Page)

Plant Expansion



The Frank G. Hough Co. of Libertyville, Ill. has announced the construction of a 55,000 sq ft addition to its plant to meet the increased demands for tractor-shovels. The new buildings, which are expected to be completed this year, will give the plant a total of 368,000 sq ft

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You, too, can profit by installing an MHS Tow Conveyor. We'll engineer the installation to your particular building and requirements. A letter or call will put us to work to save you money.



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Highway . . .

(Continued from Page 111)

tion shows that in 85 cities, representing 38 states and the District of Columbia, 129 construction projects totalling an estimated \$5.5 billion have been adversely affected because an expanded federal highway program was not enacted last session. Involved, also, is industry expansion and relocation, bringing benefits to others outside of the trucking industry—such as the retail food industry, banks, railroads and other public utilities.

Types Highways

Q: What kind of interstate highway construction will we get for our money, more of the same or expressways and superhighways?

A: Recommendations of state governments and the Bureau of Public Roads will have a great bearing on the type of highway construction. However, a study by BPR, prepared in 1954 but still applicable, shows that for nearly 7,000 miles of the system a two-lane road will be adequate. The bulk of needed improvement applies to over 28,000 miles of highways which should be in the four-lane, divided highway class, and 2,300 miles which would be six or more lanes wide; the latter in areas of high population densities.

Industry Backing

Q: You make frequent reference to what the American Trucking Associations, Inc., thinks about transportation and highway problems. There are many other associations whose members have a direct interest in highways, what do they think of the Fallon and Boggs bills?

A: Early this year, 11 national associations issued a joint statement urging Congress to take prompt action for the modernization of the nation's highways. ATA was one of them, of course. The others are:

United Fresh Fruit and Vegetable Assn., National Retail Dry Goods Assn., Truck-Trailer Manufacturers Assn., National Grange, Rubber Manufacturers Assn., National Association of Motor Bus

Operators, National Sand and Gravel Assn., Milk Industry Foundation, International Association of Ice Cream Manufacturers, and National Rural Letter Carriers' Assn.

There are many more associations that favor the proposed program but have not made any formal, written presentation to Congress. Among them is the Private Truck Council of America, Inc., representing the nation's major private carriers.

Financing Breakdown

Q: An article in your March issue by Mr. E. Shelton Forest states that there are two highway programs—interstate and the federal-aid primary and secondary highways and urban extensions—the former to cost \$25 billion plus a few millions, the latter adds up to \$2.25 billion. However, I can't add the whole business up to any of the amounts I've been reading about; namely, \$35 billion, \$38.9 billion, \$50 billion, \$52 billion. Will you please give me the correct total figure and a brief breakdown by highway category?

A: The Fallon bill authorizes a 13-year building program by the federal government amounting to \$37.347 billion. This breaks down to \$25 billion for the interstate system; \$11.375 for the primary and secondary systems, and urban extensions to these systems; plus \$972 million for public domain roads (forest highways, park roads, (Please Turn Page)

New River Boat



New 200-ft river towboat, the "A D Haynes II," was christened recently at the Pittsburgh shipyard of Dravo Corp. This vessel, and a sister ship, the "Valley Transporter," which was launched at the same time, are the most powerful twin-screw diesel towboats ever built for inland waterways navigation. Both were constructed for the Mississippi Valley Barge Line Co., St. Louis, and will operate mainly in the lower Mississippi River trade

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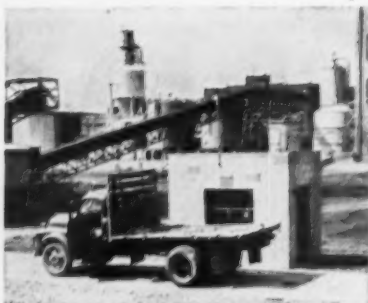
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Highway . . .

(Continued from Page 113)

Indian roads, etc.). This adds up to \$37.347 billion. State matching funds for the interstate, primary, secondary roads, and urban extensions, will amount to \$14.155 billion. The sum of the last two figures is \$51.502 billion, the estimated cost of the entire highway building program.

The Boggs bill provides the funds over a 16-yr period.

Collection and Enforcement

Q: *The government has been using private industry to collect its excise taxes, but how does it expect to collect the weight tax? Are there any provisions for enforcement of this tax?*

A: The method of collection has not, to the best of our knowledge, been announced. Our Washington contact has information that windshield stamps, such as used during World War II, are being considered.

As to enforcement, Rep. Boggs said he checked with the Treasury Department on this point and was assured that the weight tax could be checked by income tax audit.

Rising Costs

Q: *Three years ago, I obtained estimates for a new terminal and warehouse that showed the job could be done properly for \$300,000. For reasons beyond our control construction was delayed until last month. This year, a recheck on the estimate came up with a \$40,000 increase. There were no changes in plans. The increases were due to higher labor and material costs. Has the government given consideration to rising costs in its 13-yr highway construction program?*

A: In the first place, we understand that proposed tax revenues were estimated very conservatively, and construction estimates contain some allowances for labor and material cost increases.

In addition, the House Ways and Means Committee intends to stipulate that the program be self-liquidating. There is a good possibility, in the early years of the

program, that income from taxes will accumulate more rapidly than expenditures. The Committee does not intend to let these surpluses accumulate in the trust that will manage the funds. Surpluses over current commitments will be invested.

Conversely, there also is a provision whereby the federal treasury will be authorized to make advances to the trust fund, if needed. These monies will be subject to interest payments.

Finally, provisions are being made for the Secretary of Commerce and a House Ways and Means subcommittee to watch the finances of the highway program. If unexpected increases get out of hand, Congress may be called to make remedial measures; shorten the program, or extend the tax period.

Q: *I'm opposed to the proposed highway rebuilding program because I believe that the present big industrial areas will benefit most. Can you tell me how many small communities will benefit?*

A: A partial answer to your question is to be found in a study made by the Research Department of the National Highway Users Conference, which shows that 406, or 93 per cent, of the nation's 435 U. S. Congressional Districts contain or are touched by routes of the interstate highway system.

Further, the NHUC study shows that only 29 Congressional Districts are without an interstate highway within their boundaries. However, five of the 29 not touched by the interstate system are in densely populated metropolitan centers which are extensively served by interstate highway routes. In most of these instances, the interstate route bypasses the District only by very short distances; in some cases, by just a few blocks.

By the way, it must be borne in mind that the present routing of the interstate system, for the most part, does not represent absolutely fixed locations. There may be minor variations in the future. As a matter of fact, some local surveys make such recommendations with the thought that better service to some communities will result. •

(Resume Reading on Page 38)



Mobilift's flexibility in handling motors, compressors, dies, tools and even 20-ft. lengths of steel rods makes it the number one choice at Quiet-Hest Manufacturing Corporation.

THESE JOBS PROVE MOBILIFT'S HIGH ECONOMY... RUGGED EFFICIENCY

Prove for yourself how a Mobilift® "Sit-Down" or "Stand-Up" Fork Lift Truck can help you cut costs at once — by substantially lowering operating and maintenance expenses . . . reducing man-hours per job to a bare minimum.

Only Mobilift Trucks give you high free lift at no extra cost . . . smooth Mobil-Matic® drive . . . fingertip controls for easier operation, and many other exclusive features.

Mobilift "Sit-Down" and "Stand-Up" Trucks operate on LPG or regular gas, and range from 2000 to 5000 lbs. capacities. Mobilift Sales and Service is available in 75 cities throughout the U. S. and Canada.

*Trade Mark



FREE TO YOU!



A Mobilift does the work of three men in handling 165 kinds of hot and cold nesting cups at Solo Cup Company.



A Mobilift reduced highway truck loading time from 15 to 5 man-hours at M. M. Stevenson & Co.

LAMSON

Lamson Mobilift Corporation
5325 Lamson Street
Syracuse 1, New York

Please send me a free copy of:

☐ Mobilift "Sit-Down" Folder on How Mobilift's Exclusive Features Save Dollars by Increasing Efficiency.



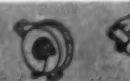


☐ Mobilift "Stand-Up" Folder describing Cost-Saving Features of the Only "Stand-Up" Gas Operated Truck on the Market.

Name _____ Title _____

Company _____

Address _____

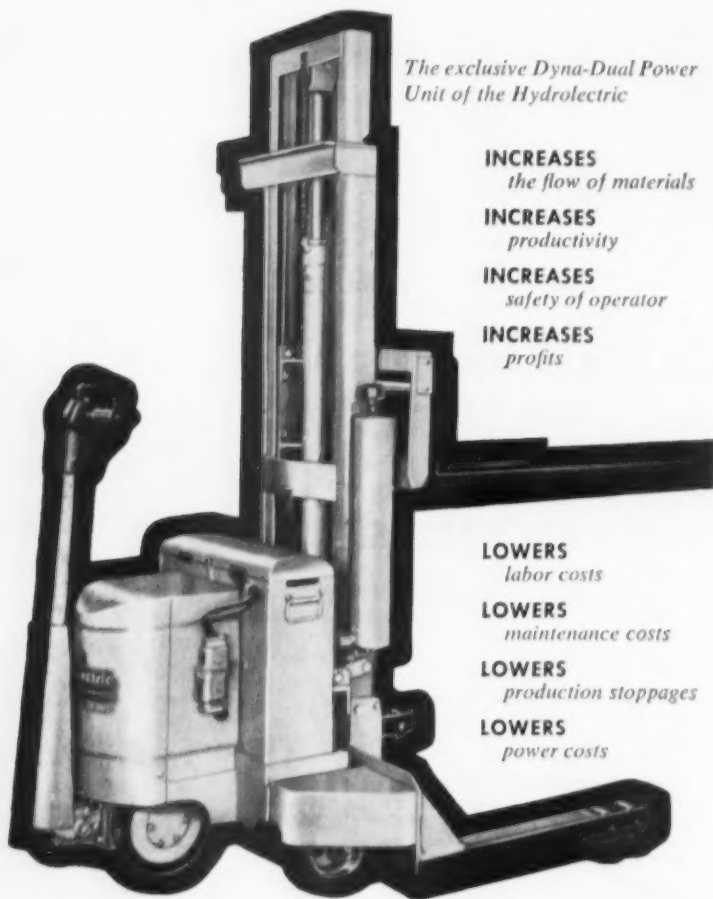
City _____ Zone _____ State _____

Circle No. 24 on Card, Page 53, for more information

MODERNIZE WITH America's most Modern Truck **Hydrolectric**

A GREAT NAME IN LIFT TRUCKS



The exclusive Dyna-Dual Power Unit of the Hydrolectric

INCREASES
the flow of materials

INCREASES
productivity

INCREASES
safety of operator

INCREASES
profits

LOWERS
labor costs

LOWERS
maintenance costs

LOWERS
production stoppages

LOWERS
power costs

The only truck with 2 driving wheels and 2 braking systems. In fact Hydrolectric does everything a good lift truck should do.

STUEBING Designed • Engineered • Built



LIFT TRUCKS, INC., / CINCINNATI 14, OHIO



THERE IS A TRUCK FOR EVERY PURPOSE TO HANDLE ANY KIND OF MATERIAL.

Men in the News

(Continued from Page 20)

Henry E. Roethe, Jr.—appointed manager, Rate Section, Commercial Solvents Corp., New York, N. Y.



Highway



J. P. Dragin (left) named vice president, finance, and **Henry J. Pipp**, named controller, White Motor Co., Cleveland, O. **John A. Sargent**, elected a director.

John L. Tormey—appointed controller, Roadway Express, Inc., Akron, O.

Howard Kunkle—named Spector Terminal Manager, Baltimore, Md.

Geves G. Kenny—named director of terminal design and construction, Roadway Express, Inc., Akron, O.

Frederick L. Redmond—returned to his former job as manager of the M & R Transportation Co. Springfield, Mass., terminal.

Robert J. Duffey—appointed president Jones Transfer Co., Monroe, Mich., succeeding his father, **Joseph E. Duffey**, named chairman of the Board.

John M. Kinnaird—joined Consolidated Freightways, Portland, Ore., as assistant to the vice president-industry activities.

T. W. Rust—named director of insurance and safety, Yellow Transit Freight Lines, Kansas City, Mo.

Rail

P. J. Neff—elected president, Missouri Pacific Railroad, St. Louis, Mo. **H. M. Johnson**—elected executive vice president.

Edward H. Buelow—new general manager, Illinois Central Railroad, Chicago, Ill. **Otto H. Zimmerman**—named operating vice president.

Clyde J. Fitzpatrick—elected president, Chicago & North Western Railway, Chicago, Ill.

Water

John W. Oehler—elected vice president, A. L. Mechling Barge Lines, Inc., Joliet, Ill.



Materials Handling



Richard E. Whinrey—elected vice president, Link-Belt Co., Chicago, Ill.

Ivan E. Howard—promoted to general service manager, Lamson Mobilift Corp., Syracuse, N. Y.

Hubert F. Green—named general sales manager, Speedway Conveyors, Inc., Buffalo, N. Y.

L. A. Doughty—elected president, C&D Batteries, Inc., Conshohocken, Pa. **L. R. Gardner**—elected to the Board of Directors. All other directors were re-elected.

L. B. McKnight, president of Chain-Belt Co., Milwaukee, Wis.—elected a director of The Heil Co., Milwaukee.

William P. Downey—promoted to supervising engineer of the Hyster Co., Straddle Truck Div., Portland, Ore.

Packing & Packaging

Thomas J. Luddy—joined the staff of the National Wooden Box Assn., Washington, D. C.



Yale Mann, **David H. Blatt**, **Irving Levine**, and **Frank L. Bernstein**—elected vice presidents, National Container Corp., New York, N. Y.



Bert Cole—elected senior vice president, Atlas Plywood Corp., Boston, Mass.

Mrs. Olive Salmier—appointed exec. vp. of Specification Packaging Engineering Corp., No. Hollywood, Calif.



Charles V. Molesworth—elected senior vp in charge of marketing, Atlas Plywood Co., Boston, Mass. **Douglas M. Cowie**—elected vp in charge of manufacturing. **Bert Cole**—new vp in charge of sales. **Stanley R. Venne**—elected vp in charge of timber and lands, and **George L. Houle**—appointed chief of staff.

T. W. Regan—elected a director, General Box Co., Des Plaines, Ill.

James R. Williams—promoted to Chicago district sales manager, Signode Steel Strapping Co.

David C. Wyland—appointed assistant superintendent, Chase Bag Co., St. Louis, Mo.

(Resume Reading on Page 27)



**YOU CAN STACK OR SHIP
ANYTHING
ON E.M.I. RACKS!**



Keep your materials
WELL STACKED!

Equipment Manufacturing storage racks that stack, cut time and handling costs, protect workers and stock, and speed inventory.

E.M.I. racks are made of strong, welded tubular steel and are adjustable to fit any space or unit load. Special racks designed to your specifications. Field engineering service on any installation.

Before you decide on a new warehouse, additional storage space or the purchase of stacking equipment write for our new catalog.

*Write for
our new
Catalog*



**EQUIPMENT
MFG. INC.**

21542 HOOVER ROAD • DETROIT 5, MICHIGAN
Materials Handling Equipment Stacking Racks for Industry

Circle No. 26 on Card, Page 53, for more information

HOW MIDWEST PRINTER SOLVED UNIQUE SHIPPING PROBLEM

Sunday supplement section of a Midwest newspaper is printed many hundreds of miles away. It must arrive on an exact schedule for distribution with the main part of the paper.

To be sure of prompt arrival, the shipment goes every week by Nickel Plate "Piggy-Back." Shipper and consignee know exact location of the shipment at all times. Other "Piggy-Back" advantages: service from shipper's door to consignee's door; speed; schedule dependability; rail safety.

For more information about the advantages and economies of Nickel Plate High Speed "Piggy-Back" service, call your local representative.



General Offices:
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Cleveland 1, Ohio
Phone: MAin 1-9000

Electric Protection Services FIRE·BURGLARY·HOLDUP

**Automatic Fire Detection
and Alarm Service
Sprinkler Supervisory
and Waterflow Alarm Service
Watchman's Supervisory and
Manual Fire Alarm Service
Industrial Process and Heating
System Supervisory Service
Burglar Alarm and
Holdup Alarm Services**

AMERICAN DISTRICT TELEGRAPH CO.
135 SIXTH AVENUE NEW YORK 13, N. Y.
Central Stations in All Principal Cities



Circle No. 27 on Card, Page 53, for more information

Free Literature

(Continued from Page 55)

Foreign Trade Service

A new brochure that sets forth the foreign trade services to be offered by San Francisco's soon-to-open **World Trade Center** is available. The new brochure goes into detail on the offices and display areas available to trading firms and organizations taking space in the Center. It also spells out the promotional and reference services that will be provided by the center to both tenants and traders who call at the mart.

Circle 132 on Service Card, Page 53

Portable Warehouse

A broadside, recently published by **United Steel Fabricators, Inc.**, shows nine different variations of the standard **USF Handy-Hut**—a portable, all-steel building. It also illustrates **USF's** clip-and-wedge method of erection without screws or bolts; tells how to adapt and build to your requirements from a basic design by adding length in 2-ft multiples.

Circle 133 on Service Card, Page 53

Low-Lift Rider Truck

The low-lift Model M rider type trucks are described in a four-page bulletin published by **Lewis-Shepard Products, Inc.** The new models, in capacities up to 4,000 lbs., are available in both the pallet type for handling single face or double face pallets and the platform type for skid platforms.

Circle 134 on Service Card, Page 53

Freight Forwarders List

The fifth revised list of independent foreign freight forwarders registered with the Federal Maritime Board under General Order No. 72, and issued by the **Customs Brokers and Forwarders Assn.**, now is available. The new list contains additions, changes and deletions, and answers the many requests for accurate, up-to-date information.

Circle 135 on Service Card, Page 53

Bucket Conveyor

A catalog released by **Hapman-Dutton**, illustrates and describes the pivoted bucket carriers, claimed to provide speeds up to 60 fpm and capacities to over 100 tons an hour. The design includes a continuous series of buckets, suspended between two endless chains. The buckets may be from 12 to 24 in. wide.

Circle 136 on Service Card, Page 53

Power Belt Conveyors

A four-page bulletin on the new Ve-Be-Vayor, light-weight, aluminum power belt conveyor, is available from A. B. Farquhar Div., The Oliver Corp. The Ve-Be-Vayor Bulletin gives information and specifications on the construction advantages incorporated in this new power belt conveyor for general uses. It explains why it is impossible for the carrying belt of the Ve-Be-Vayor to run off center and how easy it is to "take-up" the belt.

Circle 137 on Service Card, Page 53

Steel Caster Data

A new four-page condensed catalog showing its full line of casters is now available from The Rapids-Standard Co. Exclusive features of steel forged, cold forged, and stamped steel in classifications from light (150 lb) to heavy (3,000 lb) duty are described, and recommended uses for each of the series are listed.

Circle 138 on Service Card, Page 53

Cable Conveyor

Technical engineering data, and a bulletin describing the new, light, overhead cable conveyor system, manufactured by Triangle, now is available. Features include the ability of the trolleys, which carry up to 150 lb, to round corners, side-step posts, pillars and other obstructions, without the use of idle corners.

Circle 139 on Service Card, Page 53

(Resume Reading on Page 56)

An Expert Retires



John J. Inch, Scott Paper Co.'s veteran traffic consultant and well-known transportation expert, is bid a warm farewell by the company's executive vice president, Raymond C. Mateer. Inch, garbed in engineer's hat and jacket, was installed in the cab of a Reading Railroad switcher to lend a bit of drama to a retirement party staged later that same day. The unique send-off was arranged because of Inch's close association with rail carriers during his 47 years with Scott.

RACK PALLET TRUCKS

answer

every
Pallet
handling
need!

Rack lightweight—
heavy duty hydraulic
Turnabout trucks—mass
produced for low initial
and maintenance costs—
are of all welded steel
construction, featuring
overload safety valve,
chrome plated rams
and pistons, interchange-
able forks in standard
lengths of 30", 36", 40",
42" and 48"—and special
lengths of 54", 60" and
72".



\$495.00

RACK TURNABOUT®
Hydraulic with Interchangeable Forks
4,000 lb capacity



\$375.00

RACK TURNABOUT®
Hydraulic with Interchangeable Forks
2,500 lb capacity



\$195.00

RACK MECHANICAL TRUCK
Hand Operated—1,000 lb capacity

Write for Bulletins today!

RACK

HYDRAULIC EQUIPMENT CORPORATION

137 SIXTH STREET

CONNELLVILLE, PA.

Distributors in Principal Cities

Plants: Connellsville, Pa.; Gardena, Calif.; Farnham, Canada; Slough, England
Circle No. 28 on Card, Page 53, for more information

Chuting the News . . .

(Continued from Page 20)

Western Handling Conference and Show Set For May 9-11

The Western Materials Handling Conference and Exposition, sponsored by the Los Angeles Chapter, AMHS, will be conducted May 9-11 at the Great Western Livestock Exhibit Building, in Los Angeles.

In addition to displays of conveyors, industrial trucks, hoists, cranes, etc., the program will feature technical sessions conducted by some of the nation's leading experts in the field of materials handling.

"Follow Through in the States" is the theme of the Sixth Highway Transportation Conference, scheduled for May 8-10 at the Mayflower Hotel, in Washington, D. C. Albert Bradley, chairman of the National Highway Users Conference, will deliver the keynote address.

The Eastern Industrial Traffic League has announced that its Semi-Annual Meeting will be conducted May 15-16 at the Benjamin Franklin Hotel, in Philadelphia, Pa.

The Chamber of Commerce of the United States has taken a stand that the principle of the Cargo Preference Act must be preserved if the United States is to maintain an adequate merchant marine.

Five states, Md., N. J., N. Y., S. C., and Va., have introduced anti-diversion amendments to their constitutions to help alleviate the highway problem.

Allen F. Mather has been elected chairman of the California Conference, NHUC.

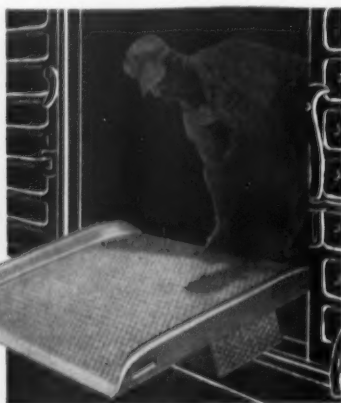
Two-Way Tanker



This unique tandem-axle cargo unit is a custom-designed two-way trailer used by Indianhead Truck Line, Inc., St. Paul, Minn. It hauls 6,500-gal gasoline cargoes on outbound trip from Twin Cities, then 40,000 lb of grain on the return run. There is a grain compartment in the center and gasoline compartment at each end, with the grain compartment empty on the trip with petroleum products, and gasoline compartments, in turn, empty inbound when the unit hauls grain to local terminals. The grain compartment is loaded by gravity through hatches at top and unloaded in approximately two minutes in a level position through the compartment's hopper bottom.

Thomas A. Boint, freight traffic manager, National Lock Co., Rockford, Ill., is new president of the Illinois Territory Industrial Traffic League.

man
putting
down
a
sound

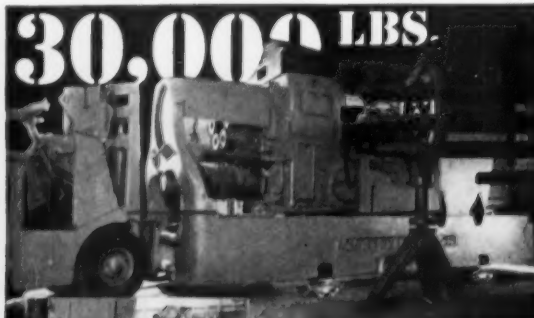


investment!

This company has made a wise investment—one which will pay many dividends over a long period of time! The man above is dropping a Magliner magnesium dock board in place on the company's dock. This new Magliner will speed loading . . . get more out of power trucks and other loading equipment . . . keep costs down! Made of light, strong magnesium, it will protect men, loads and equipment against accidents and costly damage. It will also pay other big dividends! Magliners are low in initial cost—and because they provide dependable, long-life service with less maintenance they give you greater economy ALL ways! Find out today, how Magliner dock boards can cut costs in your operation. Write for Bulletin DB-204!



MAGLINE INC. • P. O. BOX 65 • PINCONNING, MICHIGAN
Canadian Factory: Magline of Canada, Ltd., Rexford, Ontario
Circle No. 29 on Card, Page 53, for more information



One man can jack and bolt these dollies in minutes.

machine moved 55 feet a minute by two men and reduces moving cost 65%.

"Mighty Mover" Heavy Duty Dollies provide the safest, fastest, cheapest way to move heavy, bulky machines or equipment. Simple to use . . . save time and labor on any moving job. Equipment always under complete 360° directional control . . . wide roller bearing wheels move easily over any surface. Mighty Mover dollies bolt conveniently to any base. Capacity to 100,000 lbs.

Write for illustrated circular.



Mighty Mover dolly has two 4-inch roller-bearing cast iron wheels. Top plate swivels 360°. Wt. 40 lbs.



MIGHTY MOVER COMPANY
1480 S. Milwaukee St. • Denver 10, Colorado

Circle No. 30 on Card, Page 53, for more information

DISTRIBUTION AGE

Inclined Storage



Nine 60-ft bays of inclined storage racks have reduced by 50 per cent aisle space required per front and improved shipping flow for Holo-Krome Screw Corp., Hartford, Conn., hexagonal socket screw manufacturer. "Pick-A-Case" gravity-feed racks let feeding and picking aisles function independently, eliminating traffic jams. System, affording 1085 fronts, was designed, fabricated and installed by Artec Corp

Uniform rates and practices have been adopted for the first time by 10 California ports and terminals in a joint effort to reduce operating losses.

Nelson M. Hickok, traffic manager of the Western Paper Converting Co., has been elected president of the Pacific Northwest Advisory Board.

—DA—

Truckers Report Decrease in Loss and Damage Claims

Loss and damage claims paid by the trucking industry for the year 1955 decreased by five per cent, accounting for a 20 per cent decrease in the last two years, the ATA's Freight Claim Section reported last month.

The ratio of claims paid in proportion to gross revenue in 1955 on the basis of a representative sample of trucking companies was 0.97. The same ratio in 1954 was 1.02, while the 1953 ratio was 1.18.

Reports from 94 companies with revenues ranging from nearly \$50 million a year to only slightly more than \$100,000 showed a total gross revenue for the sample of \$593,627,192 in 1955. Net loss and damage claims paid by these motor carriers amounted to \$5,539,931.

Waterway Operators Name Safety Contest Winners

The American Waterways Operators, Inc., last month announced winners of its 1955 safety contest. The contest was conducted under the rules of the National Safety Council.

Six entrants in Group B (under 10,000 man-hours) had perfect accident-free records. They are:

Greenville Transportation Co., Greenville, Miss.; Armco Steel Corp., Huntington, W. Va.; Streett Towing Co., St. Louis, Mo.; Marquette Cement Manufacturing Co., Chicago, Ill.; Missouri Barge Line Co., Cape Girardeau, Mo.; and The New Haven Towing Co., New Haven, Conn.

In Group A (more than 10,000 man-hours) the River Transportation Department of the United States Steel Corp., had the best safety record. James McWilliams Blue Line, Inc., New York City, had the second best record, and the John I. Hay Co., of Chicago, Ill., won third place.

(Resume Reading on Page 21)

One man with a LINK-BELT

Car Spotter can pull up to

6 loaded RR cars

You prevent tie-up of freight cars . . . save the cost and delay of bringing in a switch engine with a Link-Belt Car Spotter on the job. Two or three quick turns of rope around the motor-driven capstan lets your operator control up to 10,000 lbs. of pulling power. Cars are brought to loading and unloading locations faster—minimizing demurrage charges.

Choose from portable or stationary models, 5 or 10 hp, integral or separate motors.

12-000

LINK-BELT COMPANY
Prudential Plaza
Chicago 1, Ill.

Please send me 24-page illustrated Book 2092 on Link-Belt Car Spotters and Drum-type Pullers.

Name _____

Firm _____

Address _____

City _____ Zone _____ State _____

Circle No. 31 on Card, Page 53, for more information

Industry Items

American District Telegraph, New York, N. Y., has bought controlling interest in the Dominion Electric Protection, with head offices in Toronto and central stations in seven Canadian cities.

National Truck Leasing System conducted its 1956 Spring Executive Conference at San Marcos Inn, Chandler, Arizona.

Delta Air Lines inaugurated service from Atlanta to New York and Washington recently.

A new line of industrial conveyors is being introduced by The Colson Corp., Elyria, Ohio.

Consolidated Freightways has completed its purchase of Foster Freight Lines, of Indianapolis, Ind., following receipt of ICC approval.

Thirty years of scheduled air service recently was celebrated by United Air Lines as the nation's oldest air carrier.

The acquisition of Automotive Gear Works Inc., Richmond, Ind., by Eaton Manufacturing Co., Cleveland, Ohio, through an exchange of stock has been announced.

The freight sales office of KLM

Royal Dutch Airlines has been moved to expanded and improved building facilities at 250 Pearl St., New York, N. Y.

Deferred billing of air freight shipments which streamlines the flow of cargo from origin to destination has been placed in effect by United Air Lines.

Strick Trailers, a division of Fruehauf Trailer Co., will build a new 200,000-sq ft truck-trailer manufacturing plant in the Philadelphia area during 1956.

Pacific Intermountain Express has opened an office in Minneapolis, Minn.

ACF Industries, Inc. and Fruehauf Trailer Co. are offering a combination sales package of Fruehauf truck-trailers and the new ACF Adapto railway car.

Roadway Express, Inc., has opened subterminals in Fayetteville, Goldsboro, and Rocky Mount, N. C.

Trailer Train Co. has placed orders for 1,000 new type flat cars for piggyback service.

Monon Railroad has announced plans for a \$3 million improvement program for 1956.

Ground has been broken by Miami National Container Corp. for construction of a new corrugated paper box plant in Miami, Fla.

The Electric Storage Battery Co., Philadelphia, Pa., has purchased all the stock of Jessall Plastics, Inc.

Plans for construction of another 200 Pacific Fruit Express mechanically refrigerated super giant cars and 1,800 standard refrigerator cars have been announced.

Purchase of the assets of Tracto-Lift Co., Kansas City, Mo., has been announced by Ottawa Steel Div., L. A. Young Spring & Wire Corp.

An agreement has been concluded between National Carloading Corp. and Air Express International Corp. whereby shippers who utilize forwarder lcl service in moving their overseas shipments to the gateways will be provided a through surface-air movement to foreign destinations.

Clark Equipment Co. has announced that it will expand its new Construction Machinery Div. plant, in Benton Harbor, Mich., by 50 per cent.

United Air Lines has signed a 15-year lease with the City of Philadelphia for a new cargo handling area at the International Airport.

Colson Corp., Elyria, O., has opened a branch office and warehouse in Portland, Ore.

NEW — FAST — SAFE — ECONOMICAL INLAND SEAL-LESS STRAPPING

Inland Seal-less Strapping is the new trend that offers many advantages over the conventional strapping methods. You have only the strapping itself to work with — no seals — no time or cost of applying seals. The application of Seal-less Strapping is accomplished with a compact, easy-to-operate machine. A simple operation tensions the strapping and mechanically interlocks the two ends so the joint will test from 77% to 86% of the strength of the strapping itself. Seal-less

Strapping has, in many cases, permitted the use of lighter and less costly packing materials at an added saving.

INLAND Complete Packaging Service

—includes round steel strapping and machines, stitching wire and machines, bale ties, tag fasteners, etc.

Write for literature on this cost reducing method, without obligation.

A few select territories still open—
Inquire, giving qualifications



INLAND WIRE PRODUCTS COMPANY

3965 South Lowe Avenue, Chicago 9, Illinois

Circle No. 32 on Card, Page 53, for more information

STURDI-BILT ADJUSTABLE STORAGE RACKS



ONLY 3 BASIC PARTS



Make any type rack for
PALLETS • BULK • SKIDS • DIES



VERSATILE! FLEXIBLE! ECONOMICAL!

One rack to serve all your needs! Handle all types of storage interchangeably at any time! No tools, nuts, bolts, erection welding or special labor to assemble, rearrange or adapt to changing needs. Available in one or two pallet width openings — heights to fit your needs — and they stack for added utility.

Sturdi-Bilt

ENGINEERING CO. INC. Dept. DA-5
2501 Peterson Ave., Chicago 43, Ill.

Circle No. 33 on Card, Page 53, for more information

DISTRIBUTION AGE

Washington DA

(Continued from Page 27)

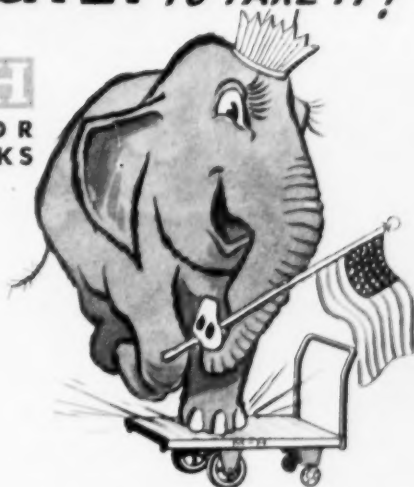
MEET ON TRANSPORT—Transportation trends in the new year were analyzed by more than 300 industry and government experts meeting in Washington recently under U. S. Chamber of Commerce sponsorship. Rep. Priest, D., Tenn., House Commerce Committee chairman, will discuss legislative topics of interest to shippers and carriers. Presiding will be J. H. Carmichael, president of Capital Airlines and vice president of the chamber.

TUBE PLANTS THRIVE—Manufactured products shipped by the collapsible tubes industry during 1954 were valued at well over \$36 million, recent U. S. Census Bureau statistics show. As compared with shipments in 1947, the increase was 36 per cent. All except 6 per cent of the 1954 deliveries consisted of tubes used as containers for various materials, plus caps, spouts, and applicators for the contents.

GIVES MERGER GRANT—Necessary authority is given by the ICC to Pacific Intermountain Express Co., Oakland, Calif., to merge into itself two Salt Lake City firms, Orange Transportation Co., Inc., and Collett Tank Lines. Cash, stock, and notes included in the transaction amount to about \$1.8 million. Orange hauls general commodities, and Collett moves gas and oil between points in eight western states.

BUILT TO TAKE IT!

that's
M&H
FLOOR
TRUCKS



The right M&H Floor Truck for every industrial purpose — platform, rack, box, shelf, table, two-wheel, drum, case and package — industrial trailers.

M&H EQUIPMENT CO., INC.
SALAS TERAS
707 FABRICATION ST. • PHOENIX 2142

Write for name of your nearby distributor.

Circle No. 34 on Card, Page 53, for more information

MAY, 1956

HOW TO
INSTALL HI-LO
DOCKBOARDS
FOR YOUR
NEW OR
EXISTING DOCK



KELLEY COMPANY, INC.

316 E. Silver Spring Drive
Milwaukee 17, Wisconsin

Name _____

Firm _____

Address _____

City _____ Zone _____ State _____

SEND COUPON FOR BLUEPRINTS AND BULLETIN D-155

Free Plans

FOR INSTALLING HI-LO DOCKBOARDS FOR NEW OR EXISTING LOADING DOCKS

HERE'S WHY
HI-LO IS YOUR BEST INVESTMENT!

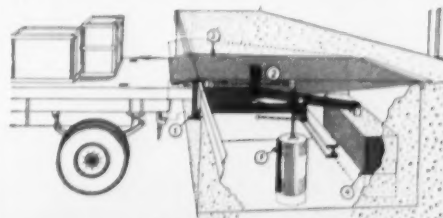
• COMPLETELY AUTOMATIC

Truck automatically adjusts HI-LO to its bed the instant it contacts the dock. No buttons, valves or controls of any kind. No dock attendant needed.

• FIRST COST IS ONLY COST

Simple counterweighted system. Built to outlive the dock itself. No air, electric or hydraulic power. Not one spare part has ever been sold.

Write today for prints and Bulletin D-155. Get the facts on both HI-LO Recessed Models and Packaged Unit Dockboards.



THE
TRUCK
SUPPLIES
THE
POWER



HI-LO

FULLY AUTOMATIC
DOCKBOARDS

Manufactured by **KELLEY COMPANY, INC.**

316 E. Silver Spring Drive • Milwaukee 17, Wisconsin

Circle No. 35 on Card, Page 53, for more information

NTLS Companies engineer your entire fleet and each individual truck!

Tailor-Made TRUCKS

National TRUCK LEASING SYSTEM

TO YOUR SIZE, TYPE, NEEDS

DON'T BUY—LEASE YOUR TRUCKS. New capital for your old fleet! Save management time. No ownership headaches; no shop and clerical details. Costs known in advance! Flexible . . . peak or slow periods. TRUE, FULL-SERVICE leasing (everything but the driver) by experienced NTLS companies. Learn more—

ONLY ONE INVOICE

LOOK FOR THIS TRADE-MARK IN THE YELLOW PAGES OF YOUR PHONE BOOK FOR YOUR LOCAL NTLS OPERATING COMPANY, OR WRITE DIRECT TO:

National TRUCK LEASING SYSTEM
Members in principal cities
Dept. A-5, 23 E. Jackson Blvd., Chicago, Ill.



General Merchandise and Cold Storage
U. S. Customs Bonded - 121,000 Square Feet

GENERAL FACILITIES	SPECIAL SERVICES
Air Conditioning	Loans on Stored Goods
Field Warehousing	Branch Office,
Yard Storage	Showroom Space
Fork Truck	Intransit Storage
Palletized Storage	Pool Car & Pool Truck
Sprinklers	Local Cartage - Rigging
Watchman	Refrigerated Delivery

MEMBER
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AMERICAN CHAIN OF WAREHOUSES

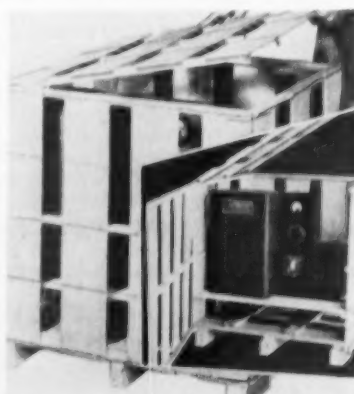


New Products . . .

(Continued from Page 59)

Relay Pack Wirebound

For shippers of assembled products, a new wirebound container design which simplifies costly relay packing is a recent development by The American Box Co. It solves container problems for manufactured products which must first be relay shipped to temporary destinations for attaching one or more sub-assemblies, before being re-shipped to final destinations. The Relay-pack opens at side and top. Wrap-around style with side



closure for quick, easy original packing, and all-bound lid at top for relay-packing allow accessories to be attached without knock-down and rebuilding of crate. Simple loop fasteners permit quick access and closure.

Circle 168 on Service Card, Page 53

Caster Wheel Mounting

Bronco Products Co. has announced a new type of caster wheel mounting assembly called the Bronco-Forbes Swinging Axle. This mounting provides all the advantages of regular caster wheel operation together with the advantages of axle controlled steering. The construction provides for a mounting of a pair of casters on an axle which is pivotally mounted on the vehicle, together with means for locking either the two casters against individual swiveling or the axle against any pivotal movement. In operation, when the

steering arm is down in towing position, the wheels are locked in pulling position and directed by



control of the axle. When the steering arm is up, the axle is locked in position on the truck and the wheels are released for full caster type operation.

Circle 169 on Service Card, Page 53

Hands-Free Telephone

Terminal manager, truck dispatcher, rate clerk or other worker can answer the telephone and carry a conversation while continuing his other work with the new Stromberg-Carlson hands-free telephone. This telephone has a



microphone that is sensitive in all directions, and can pick up conversation at ordinary voice levels from as far away as 20 ft. Thus the user can continue to work with his hands free, checking rate tariffs or pro numbers, looking up truck routes, crossing the room to get bills of lading or waybills from a file, etc. The microphone weighs only 4 oz., and is attached to the telephone instrument by a 12-ft cord.

Circle 170 on Service Card, Page 53
(Resume Reading on Page 60)

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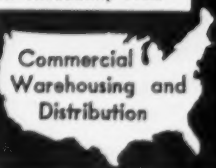
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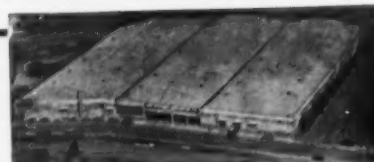
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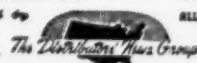
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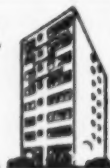
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North Pier Terminal Co.

Executive offices: 444 Lake Shore Drive, Chicago 11 — Superior 7-5406

... Packaging Show

(Continued from Page 41)

boxes, with savings in material, labor, tare weight, and storage space.

Ply-Bound, a new style of container combining the features of wirebound and plywood containers, was displayed by Atlas Plywood Corp. Mid-States Gummed Paper Co. displayed a new skin packaging board that permits all types of products to be skin packed by automatic processes.

The Connecticut Hard Rubber Co. introduced Temp-R-Tape TH, a new .013-in. pressure-sensitive Teflon tape, developed as a heavy-duty non-stick facing.

Electronic Weighing

Toledo Scale Co. demonstrated an electronic system of data handling. Accurate weight information is transmitted from a remotely located scale to a recording or indicating unit where it

appears in tabulated, added, recorded, or digital-indicated form. The same company showed an automatic carton classifier designed to check automatically the weight of cartons or other containers against pre-determined standards.

Scale Specialities & Systems, Inc., exhibited a scale that will check weigh and graph the results in approximately five seconds with sensitivities to one milligram. Post Machinery Co. exhibited an electronic counter with speeds up to 5000 per second, and a multi-channel input control that allows up to 12 lines to be counted simultaneously.

Multiple Labeling

A labeler with speeds up to 250 bpm for multiple label application on glass containers was shown by Economic Machinery Co. The first automatic machine for applying

pressure-sensitive labels, with a speed of up to 60 per minute, was displayed by New Jersey Machine Corp.

For the Shipping Room

Diagraph - Bradley Industries, Inc., demonstrated a new roller process stencilling system called Rol-It-On. It consists of a specially compounded rubber roller, used with an ink pad and special ink, developed to provide speed and economy in stencil application.

Marsh Stencil Machine Co. showed a Dial-Taper, which delivers any length of tape in any sequence for sealing cartons of mixed sizes, and the Twin-Taper, which delivers any two pre-set lengths of tape, for production taping of cartons of uniform size.

Sten-C-Labl, Inc., exhibited its stencil method of addressing multiple shipping labels, tags, and carton panels. The stamp-type applicator with stencil insert is fed by a squeeze-type well.

(Resume Reading on Page 42)



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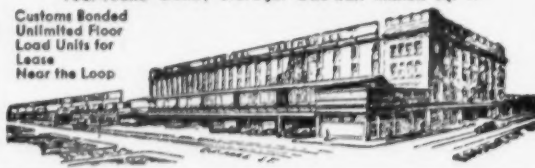
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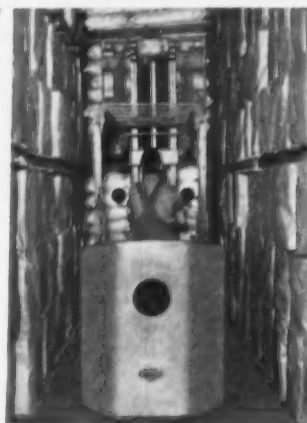
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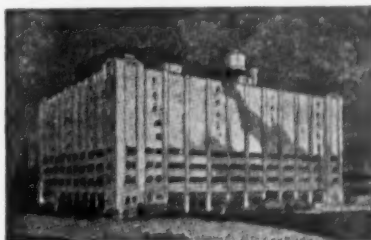
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MEMBER—A. W. A., Elmira C of C of C of Horseheads.

Within the Law . . .

(Continued from Page 62)

man for conversion and proves that he was the legal owner of the goods. The same situation arises when a wife stores the family's household goods in her own name and after she separated from her husband the warehouseman permits the husband to take possession of the stored goods that actually belong to the wife personally.

A recent higher court has held that all warehousemen may avoid financial losses arising from the above, and similar situations, by giving a warehouse receipt in the names of both husband and wife, and with a clause that either or both the husband and wife may remove the goods from storage.

For example, in *W— v. W—*, 57 S. E. (2d) 553, it was shown that merchandise was stored by a husband and wife with a bailee, as a warehouseman. The storage contract contained a clause that either or both the husband and wife could have access or possession of the goods.

In later litigation, the higher court held that under such a contract the bailee, or warehouseman, can permit either person to have access

to and possession of the stored valuables at any time a demand is made.

Can warehousemen collect storage charges for goods damaged while in storage?

Recently a warehouseman asked this interesting question. "Can a warehouseman collect storage charges for goods damaged while in storage if the storage contract fails to specify the amount of the charges?"

Under all circumstances the courts imply that a warehouseman is entitled to collect reasonable charges for services and, also, that without proof that he failed to exercise ordinary care to safeguard the stored merchandise, the owner of the stored goods must pay such charges although he contends, but fails to prove, that the warehouseman's negligence resulted in damage to the stored goods. Furthermore, the warehouseman does not forfeit his legal right to a lien to secure reasonable payment for his services, although the owner removes the merchandise from storage.

For example, in the leading case of *F— v. E—*, 269 Pac. 232, the

testimony disclosed that the owner of 3,000 boxes of apples, stored them with a warehouseman. Sometime later the owner of the apples, not being satisfied with the condition of the apples, instituted legal proceedings and recovered possession of them.

The warehouseman sued to recover payment of the storage, transportation, and labor charges amounting to several hundred dollars. The owner of the apples attempted to avoid liability on two grounds: First, the warehouseman's charges were excessive and second, that the lien on the apples was lost when the same were removed from the warehouse.

The court held the warehouseman entitled to collect full compensation for his various charges, saying:

"The law implies an agreement on the part of bailor to pay reasonable compensation for the service of the warehouseman. We think there is really no room for difference of opinion about the right of defendants (warehousemen) to collect for their services in transporting, caring for, and storing plaintiff's apples and boxes."

This court explained further that since a warehouseman has implied authority to collect reasonable storage charges, the fact that the owner of

(Please Turn to Page 151)



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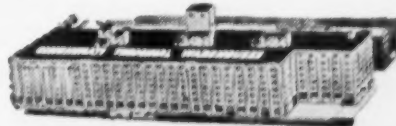
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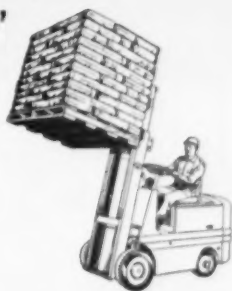
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Within the Law . . .

(Continued from Page 144)

the goods removes them from custody of the warehouseman will not prevent the warehouseman from suing the owner of the goods and recovering a favorable judgment.

TRANSPORTATION

**Are states, counties and cities
liable for negligence of their
motor vehicle drivers?**

Recently when attending a convention of motor truck operators several readers of DISTRIBUTION AGE asked substantially the same legal question, one of which wrote: "Sometime ago you wrote that states, counties and cities are not liable for negligence of their motor vehicle drivers. Why is this?"

The general answer is: The higher courts consistently hold that a state, county or municipality is not liable for injuries to persons or property caused by negligence of their employees who perform "governmental" functions. On the other hand, the higher courts hold that states, counties and cities are responsible, the

same as ordinary individuals, firms and corporations, where the testimony shows that the employee causing the injury was performing "ministerial" functions. Hence, it is important to know the legal distinctions between "governmental" and "ministerial" functions. According to a late higher court decision any business, or function, operated by either a state, county or municipality for "profit," automatically removed it from security against damage liability under the usual governmental function immunity rule.

Also, other higher courts hold that municipal water departments, operated for a profit, always are liable for negligence of its officials and employees. On the other hand, officials and employees in fire, police and similar governmental departments, not operated for a profit, perform governmental functions and, therefore, the municipality is not liable in damages for injuries to persons and property caused by these officials and employees, unless a state law distinctly and clearly removes the usual immunity.

According to the higher courts,

municipalities are not liable for negligence of employees who operate a street sprinkler. (See 142 Ky. 444; 100 Tenn. 262; 332 Ill. 70.) Or motorized street sweeping apparatus. (See 172 Okla. 286; 95 Colo. 244.) Or automobiles and equipment used to repair streets.

Other higher courts have held municipalities not liable for injuries negligently effected by motor vehicles while hauling gravel to repair a street. (See *W— v. H— Par*, 236 Mich. 279); or by a truck hauling sand and cinders to be used for repairing a street; (See 218 Fla. 603); or by a snow plow being used to clear snow from a street; (See 116 Ohio St. 281). Also, other higher courts have held that the operation of vehicles for hauling ashes, garbage and trash are governmental functions for which a city is not liable. See the following cases: 279 Pa. 549; 183 N. E. 630; 298 N. C. 729; and 104 S. W. 2d 419.

On the other hand, in a few states the higher courts hold municipalities liable for injuries negligently caused by employees while performing governmental functions in fire, police and similar departments. See 123 Florida 716; 284 Illinois App. 569; 237 Michigan 635; and 175 Acl. 885.

(Please Turn to Page 156)



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(Continued from Page 151)

Without the protection of immunity state laws, the states, counties and cities are not liable for injuries to persons and property caused by officials and employees who perform governmental functions.

Recently a higher court explained that whether a state, county or municipality is liable for an injury caused by its employees depends upon (1) whether the injury was caused by negligence of an employee and (2) whether the employee was performing governmental functions. However, the solution of such a legal problem is not so simple as may at first hand appear. This is so because a municipal corporation has a dual character and, consequently, performs a dual function. In its first aspect, its governmental, public, or legislative function must be considered, and

second, its corporate, private, or proprietary functions are important.

It is important to know that in view of this general division of character and functions, as above stated, the higher courts have consistently held that states, counties and municipalities are not liable for negligence of their officers and employees when engaged in the performance of governmental or public duties, but are liable for such negligence of its employees who perform duties of its corporate or private powers.

For example, in *K— v. City of Bremerton*, 155 Pac. (2d) 493, it was shown that a man named *K—* sued a municipality for the purpose of recovering damages suffered by him as the result of a collision between his motor truck and a garbage truck owned and operated by the city. As

a result of the accident, *K—* suffered severe physical injuries, and his truck was damaged.

During the trial testimony was given, as follows: The city's eight-ton garbage truck, empty, was being driven by a youth nineteen years of age who had no driver's license. Also, the truck was being negligently driven at an excessive speed and upon rounding a curve the young driver lost control of the truck and collided with the truck being driven by *K—*. In other words, the testimony showed that the driver of the city truck was grossly negligent. Nevertheless, the higher court refused to hold the city liable.

Also, see the recent case of *H— v. S—*, 189 Wash. 694, 110 A.L.R. 1110. This higher court held that in operation of a city health department's truck, the city was engaging in a governmental function and not liable for negligence of its driver.

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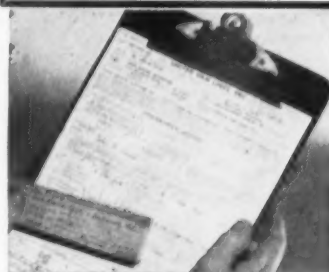
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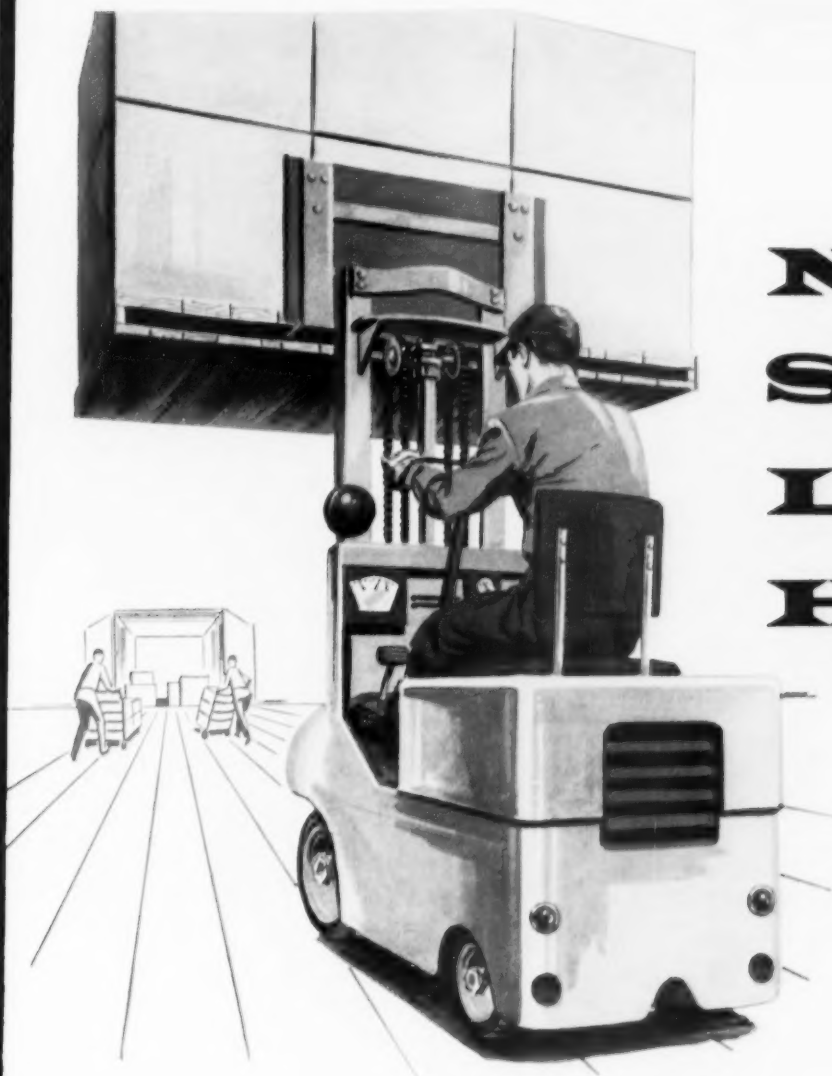
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